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JANUARY 1988

ICHTHYOPLANKTON AND STATION DATA FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CRUISES IN 1962

Barbara Y. Sumida Richard L. Charter H. Geoffrey Moser Deborah L. Snow

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CONTENTS

	Page
List of Figures	iii
List of Tables	iv
Abstract	1
Introduction	1
Sampling Area and Pattern	2
Sampling Gear and Methods	3
Laboratory Procedures	4
Identification	5
Computer Entry and Editing	10
Species Summary	11
Explanation of Tables	11
Acknowledgments	12
Literature Cited	13
Figures	16
Tables	22
T J	175

LIST OF FIGURES

		Page
Figure 1.	Composite arrangement of diagrammatic charts showing areas sampled on each CalCOFI cruise during 1962	16
Figure 2.	Station pattern for CalCOFI Cruise 6201 showing tracks for each vessel	17
Figure 3.	Station pattern for CalCOFI Cruise 6203	18
Figure 4.	Station pattern for CalCOFI Cruise 6207	19
Figure 5.	Station pattern for CalCOFI Cruise 6210	20
Figure 6.	The basic station plan for CalCOFI cruises from 1950 to the present	21

LIST OF TABLES

		Page
Table 1.	Station and plankton tow data for CalCOFI cruises in 1962	22
Table 2.	Pooled occurrences of fish larvae taken during CalCOFI cruises in 1962	45
Table 3.	Pooled numbers of fish larvae taken during CalCOFI cruises in 1962	48
Table 4.	Numbers of fish larvae taken on stations occupied during CalCOFI cruises in 1962	51
Table 5.	Summary of pooled occurrences of fish larvae taken on CalCOFI cruises from 1961-1969	171

ABSTRACT

This report provides ichthyoplankton and associated on and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) cruises conducted off California and Baja California in 1962. It is the twelfth report in a series that presents these data for all biological-oceanographic CalCOFI surveys from 1951 to the present. A total 918 stations was occupied during 4 quarterly multivessel of cruises over a survey area which extended from Pt. Reyes, California to Cape San Lazaro, Mexico and seaward to several hundred miles. The data are listed in a series of 5 tables; the background, methodology, and information necessary interpretation and quantitative analysis of the data presented in an accompanying text. All pertinent station and tow data, including volumes of water strained and standard haul factors, are listed in the first table. Another key table lists, by station and month, standardized counts of each of the 141 larval fish categories identified from survey samples. This and previous and subsequent reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the newly developed computer data base.

INTRODUCTION

of a series, provides report, the twelfth ichthyoplankton and associated station and tow data California Cooperative Oceanic Fisheries Investigations (CalCOFI) joint biological-oceanographic survey cruises conducted in 1962. This program was initiated in 1949, under the sponsorship of the Marine Research Committee of the State of California, to study the population fluctuations of the Pacific sardine (Sardinops sagax) and the environmental factors that may play a role in such fluctuations. CalCOFI, known as the California Cooperative Sardine Research Program from 1949 to 1953, was made up of representatives of the South Pacific Fisheries Investigations (SPFI) of the U.S. Fish and Wildlife Service [now the La Jolla Laboratory, National Marine Fisheries Service (NMFS)], the Scripps Institution of Oceanography (SIO), the California Department of Fish and Game (CDFG), the California Academy of Sciences (CAS) and the Hopkins Marine Station of Stanford University. The first three of these agencies supplied ships and personnel to conduct the sea surveys. NMFS processed the plankton samples and analyzed the ichthyoplankton from them. processed and analyzed the hydrographic samples and measurements and also analyzed invertebrate groups from the plankton samples.

The boundaries, station placement, and sampling frequency for the CalCOFI survey area were based on the results of joint biological and oceanographic cruises conducted by NMFS and SIO during 1939-41. Those cruises were designed to collect sardine eggs and larvae and associated hydrographic data over the entire areal and seasonal spawning range of the species. On these survey cruises, plankton tows were made to 70 m, a depth which

encompassed the vertical distribution of sardine eggs and larvae. Wide-ranging joint biological and oceanographic survey cruises were resumed in 1949 with sardine as the focus; however, an increasing interest in other biological components resulted in the deepening of standard tows to 140 m in 1951. This marked the beginning of truly quantitative ichthyoplankton sampling on CalCOFI surveys.

Data resulting from CalCOFI surveys in 1962 have been published in a number of forms. Hydrographic data (Univ. of Calif., SIO, 1962, 1963) and zooplankton volumes (Smith, 1971) were presented in standard formats. Distributional maps of larvae of 5 taxa taken on CalCOFI surveys during 1962 are presented in the CalCOFI Atlas series: northern anchovy (Engraulis mordax), Kramer and Ahlstrom, 1968; jack mackerel (Trachurus symmetricus) and Pacific hake (Merluccius productus), Ahlstrom, 1969; Pacific sardine (Sardinops sagax), Kramer, 1970; rockfish (Sebastes spp.), Ahlstrom et al., 1978. In the CalCOFI Atlas series, Cruise 6203 is labeled 6204 on distributional charts. Distribution and abundance data for northern anchovy and Pacific sardine larvae from 1951 to 1964 were summarized by Ahlstrom (1966).

A computer data base for eggs and larvae of sardine and anchovy, for larvae of hake, jack mackerel and Pacific mackerel (Scomber japonicus), and for eggs of Pacific saury (Cololabis saira) was established in 1969. The development of a data base for other fish larvae is a complex undertaking because competency of identification has evolved steadily over the past 38 years. We began the task of producing a CalCOFI ichthyoplankton data base and associated data report series in 1983. All available original records for 1962 were subjected to an extensive verification and editing process to produce this report. This with previous (Ambrose et al., 1987a,b,c; Sandknop et al., 1987a,b; 1988; Stevens et al., 1987a,b,c; Sumida et al., 1987a,b) and subsequent reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the computer data base. The data base will be modified when additional errors are discovered and when composite taxa from the years are reidentified. These reports are the fundamental reference documents against which subsequent changes in the data base can be compared.

SAMPLING AREA AND PATTERN

In 1962, CalCOFI survey cruises were conducted at quarterly intervals during January-February, March-May, July-August, and October-November. In the hydrographic data reports for 1962 (Univ. of Calif., SIO, 1962, 1963) both months are used to designate each cruise (6201-02, 6203-04, 6207-08, 6210-11); however, only the first month of occupancy is used to identify cruises in the ichthyoplankton data base and reports. A total of 918 stations included in this data base was occupied on 4 cruises, with an average of 230 stations per cruise (range 189-

247). Coverage of the survey station pattern varied among cruises and the entire survey area was not covered on any single cruise (Figures 1-5, Table 1). Stations off northern California (lines 40-57) were not occupied in 1962. Coverage off central California (lines 60-77) was a disjunct pattern extending offshore to station 200 on lines 60, 63 (on Cruise 6210 only) and 70 in each cruise except 6207. The area between Pt. Conception and Cape San Lazaro (lines 80-140) was surveyed on all cruises with the exception of Cruise 6207 which extended south only to line 130. The seaward-most station occupied on these lines was station 200 on lines 80, 83 (on Cruise 6210 only) and 90, a distance approximately 600-700 miles offshore. Typically, coverage extended to station 90 (ca. 160-260 miles offshore) or 120 (270-360 miles offshore) on those lines which did not go offshore to station 200 during 1962.

Four vessels were employed on these cruises: the Black Douglas of NMFS; the Alexander Agassiz, Horizon, and Paolina T of SIO. Two vessels participated on each cruise. The Black Douglas was used on all four cruises, the Horizon on two cruises, and the Paolina T and Alexander Agassiz on one cruise each (Univ. of Calif., SIO, 1962, 1963).

SAMPLING GEAR AND METHODS

The standard CalCOFI net used from 1949 to 1969 had a 1-m diameter mouth opening (0.785 m² area) and an overall length of about 5 m. The net was constructed of 30xxx gauze, a heavy duty grade of silk bolting cloth, with a mesh size of 0.55 mm after shrinkage. The last 40 cm of the cone and the cod end were constructed of 56xxx grit gauze which had a mesh size of 0.25 mm after shrinkage. The net ring was fastened to a short 3-lead bridle connected to several meters of line which attached to the towing cable by a clamp. A current meter was suspended in the center of the net mouth to measure volume of water filtered (see Kramer et al., 1972, for further details).

¹CalCOFI lines (Figure 6) are arranged perpendicular to the coastline and extend from the Canadian border (line 10) to below Cape San Lucas, Baja California (line 157). Stations were established on the basis of a perpendicular to line 80 (off Pt. Conception) at a point designated as station 60. Stations were plotted seaward and shoreward from station 60 on each line. Cardinal CalCOFI lines (those ending in "0") are 120 miles apart and usually bracket two ordinal lines (ending in "3" or "7"), so that lines are 40 miles apart over most of the pattern. Cardinal stations are 40 miles apart and typically these are separated by a station number ending in "5" so that stations are 20 miles apart out to station 90 on most lines. Stations are placed at closer intervals near the coast and islands to accommodate these features (see Kramer et al., 1972 for further details).

The standard tow from 1951 through 1968 was an oblique haul to 140 m depth (to 15 m of the bottom in shallow areas) designed to filter a constant amount of water per depth interval (ca. 3m³/m of depth) over the vertical range of most ichthyoplankters. Hauls were made at a ship speed of 1.5-2.0 knots and initiated by clamping the net line to the towing cable with the 45 kg terminal weight about 10-15 m below the surface. The net was lowered to 140 m depth by paying out 200 m of wire over a 4 minute period (35 m of depth/min.). After fishing at depth for 30 seconds, the net was retrieved at 20 m/min. (14 m depth/min.). The angle of stray of the towing cable was recorded every 30 seconds and maintained at 45° (+3°) by adjusting the ship speed and course. After reaching the surface, the net was washed down and the samples preserved in 5% formalin buffered with sodium borate. Flowmeter readings were made at the beginning and end of each tow. Detailed descriptions of gear and methods are given by Ahlstrom (1953), Kramer et al. (1972), and Smith and Richardson (1977).

LABORATORY PROCEDURES

Laboratory processing began with the determination of a displacement volume for each sample (methods described in Staff, SPFI, 1953 and Kramer et al., 1972). Zooplankton volumes (including ichthyoplankton) of samples collected in 1962 are presented graphically in Smith (1971).

Sorting involved the removal of ichthyoplankton from the sample and identification and separation of: eggs and larvae of Pacific sardine and northern anchovy; larvae of Pacific hake; and eggs of Pacific saury. Usually, each sample was sorted completely; however, some of the samples were fractioned into aliquots using a Folsom plankton splitter (McEwen et al., 1954) prior to sorting. Several criteria were used to determine whether a sample was fractioned: typically samples containing an abundance of thaliacians and coelenterates and exceeding 150 ml in total plankton volume were fractioned (to 50%, 25%, 12.5%) to approximate a reduced volume of 50 ml for sorting; samples with excessive quantity of fish eggs and/or larvae occasionally fractioned to expedite the sorting process in order to meet scheduled deadlines. If the identified fraction of an aliquot yielded rare or interesting species of fish larvae, the remaining fraction was frequently sorted and identified with the intent of finding additional specimens. Aliquot percentages for fractioned samples from 1962 are listed in Table 1 under the "Percent Sorted" column; 3.4% of the samples collected in 1962 were fractioned.

²Personal communication, James R. Thrailkill, National Marine Fisheries Service, Southwest Fisheries Center, La Jolla, CA.

A "standard haul factor" (SHF) was calculated for each tow to make them comparable and allow estimations of areal abundance. This factor adjusts the number of eggs or larvae in a haul to the number in 10 m 3 of water strained per meter of depth fished. If the vertical distribution of the species has been encompassed, then the adjusted value is equivalent to the number under 10 m 2 of sea surface. The SHF is calculated for each haul by the formula:

$$SHF = \frac{10 D}{V}$$

- - V = total volume of water (m³) strained during the haul

$$V = R \cdot a \cdot p$$

- where R = total number of revolutions of the current
 meter during the haul
 - $a = area (m^2)$ of the mouth of the net
 - p = length of column of water (m) needed to
 produce one revolution of the current
 meter.

Tow depth, volume of water strained, and standard haul factor are listed in Table 1 for each tow taken during 1962. Detailed descriptions of factors involved in calculating these values are presented in Ahlstrom (1948), Kramer et al. (1972), and Smith and Richardson (1977).

IDENTIFICATION

Identification of ichthyoplankton species beyond those separated during the sorting process was carried out by a separate group of specialists. Ontogenetic stages of fishes are inherently difficult to identify and this is further complicated by the large number and diversity of species which contribute to the ichthyoplankton of the California Current region. Most identifications were accomplished by establishing ontogenetic series on the basis of morphology, meristics, and pigmentation and then identifying these series by relating them to known metamorphic, juvenile, or adult stages with overlapping features (Powles and Markle, 1984). A total of 139 taxa was identified for 1962, with 81 taken to species, 28 to genus, 26 to family, and 4 to order or suborder. Beginning in 1961, larvae in the families Paralepididae and Labridae were identified to genus or species.

The task of producing a reliable and ichthyoplankton data base required extensive procedures to verify, correct, and edit the original identifications. primary data source was the original identification sheets (see Kramer et al., 1972, for examples); however, a critical resource all phases of this process was the in ichthyoplankton collection in which the samples are archived. Throughout the course of CalCOFI ichthyoplankton studies, samples have been identified to the lowest taxon possible. In reviewing these identifications for the data base, our approach has been conservative and we have preserved those identifications and counts which we could confirm, while correcting as many of the errors as possible. After computer entry, taxonomic errors and inconsistencies in the data base were corrected and the most obvious identification errors were corrected. Our current knowledge of ichthyoplankton techniques coupled with a precise understanding of the development of identification competency in the program over the years allowed us to critically judge the historical records. Identifications were changed to different taxa, lumped to a higher taxonomic category, or given a more precise taxonomic name. In some cases, identifications of a taxon were inconsistent among cruises in a year. These records were made equitable by lumping to the higher taxonomic category biases that could result in quantitative misinterpretations.

Next, statistical, seasonal, and geographic outliers were identified, employing a series of graphic summaries and listings. Examination of geographic outliers proved to be especially effective because of our accumulated knowledge of species distributions. In the course of examining samples for these outliers, other identification errors were discovered and eventually all taxa were scrutinized to some extent. Lastly, certain taxa were reexamined in all samples for the entire CalCOFI time series. These taxa were selected because of their commercial, ecological, phylogenetic, or zoogeographic importance or because taxonomic confusion was at the ordinal level. The following is a list of the taxa for 1962 which received special attention, with explanations and caveats intended to aid in quantitative interpretations:

- Anguilliformes tentative and sporadic identifications to family or lower taxon lumped to order.
- Sardinops sagax all specimens south of line 120 checked for misidentification of Opisthonema spp.
- Engraulis mordax some nearshore samples of small E. mordax may contain other anchovy genera which could not be differentiated.
- Nansenia spp. all specimens checked and identified as N. candida or N. crassa; all specimens of these species near their range boundaries checked.

- Bathylagus spp. incudes small and/or disintegrated specimens of Bathylagus or Leuroglossus stilbius.
- Stomiiformes all specimens checked and identified to genus or species; residuals are small, poorly preserved or unavailable specimens.
- Vinciguerria lucetia specimens taken seaward of station 100 checked for misidentification of V. poweriae; some V. poweriae may remain in V. lucetia samples from these stations because small larvae of the two species could not be differentiated; sporadic identification of V. poweriae began in 1961.
- Sternoptychidae tentative and sporadic identifications of hatchetfishes to genus were lumped to family.
- Bathophilus spp. all specimens checked.
- Eustomias spp. specimen checked.
- Photonectes spp. all specimens checked.
- Tactostoma macropus all specimens checked.
- Paralepididae all specimens examined and identified to species; residuals are small, poorly preserved or unavailable specimens.
- Scopelarchidae tentative and sporadic identifications to genus lumped to family.
- Lampanyctus spp. tentative and sporadic identifications to species lumped to genus.
- Lampanyctus regalis underrepresented because of inability to differentiate small larvae (<5 mm) from those of other species of the genus; counts may include other species of the genus because of difficulty in identifying larvae of this large and complex genus.
- Lampanyctus ritteri comment for L. regalis applies to this species.
- Stenobrachius leucopsarus all specimens taken seaward of station 100 checked.
- Triphoturus mexicanus all specimens taken seaward of station 100 checked for misidentification of T. nigrescens.
- Diogenichthys atlanticus all specimens at margins of range checked.
- Diogenichthys laternatus all specimens at margins of range checked.

- Electrona rissoi recognition of this species was inconsistent and others may be included in *Protomyctophum crockeri* or Myctophidae.
- Hygophum spp. all specimens reidentified to species; residuals are small, poorly preserved or unavailable specimens.
- Hygophum atratum all specimens checked.
- Hygophum reinhardtii all specimens checked.
- Protomyctophum crockeri some samples on northern lines may contain P. thompsoni, which was not identified originally.
- Physiculus spp. specimen checked.
- Ophidiiformes this category did not exist originally and ophidiiform larvae were included in Brosmophycis marginata, Carapidae, "Otophidium", "Zoarcidae", and "blenny"; identifications of B. marginata and Carapidae proved to be mostly correct and "Zoarcidae" to be a yet unidentified ophidiiform species; all "Otophidium" and "blenny" were reexamined and the former included Ophidion scrippsae, Chilara taylori and other ophidiiform taxa (moved to order); "blenny" contained O. scrippsae, C. taylori, and other ophidiiform taxa.
- Trachipteridae tentative and sporadic identifications to genus were lumped to family.
- Melamphaes spp. all identifications ascribed to Melamphaidae were reexamined and assigned to genus (Melamphaes, Poromitra) or species (Scopelogadus bispinosus, Scopeloberyx robustus); larvae originally identified as Melamphaes spp. were not reexamined and this category may contain other melamphaid genera.
- Cottidae all specimens checked.
- Hexagrammidae specimen checked.
- Oxylebius pictus all specimens checked.
- Zaniolepis spp. all specimens checked.
- Sebastes spp. category may contain other scorpaenid genera, particularly in samples south of line 120.
- Labridae all specimens originally identified to family were reexamined and assigned to genus (Halichoeres spp.) or species (Oxyjulis californica, Semicossyphus pulcher); residuals are of an unidentified southern form.
- Pomacentridae all original identifications ascribed to this family (except *Chromis punctipinnis*) were reexamined; all

- were misidentifications, and are now assigned to Gerreidae, Sciaenidae, and Carangidae.
- Chromis punctipinnis all specimens south of line 120 checked.
- Howella brodiei all specimens checked; originally identified as Apogonidae; in this report we list H. brodiei in the family Apogonidae for convenience, recognizing that its systematic affinities are not resolved.
- Carangidae includes one specimen originally misidentified as Pomacentridae; additional specimens may be misidentified or in the unidentified fish larva category.
- Seriola lalandi all specimens checked.
- Gerreidae tentative and sporadic identifications to genus were lumped to family.
- Haemulidae tentative and sporadic identifications to genus lumped to family.
- Girella nigricans specimen checked.
- Medialuna californiensis all specimens checked.
- Caulolatilus princeps all specimens checked.
- Sciaenidae tentative and sporadic identifications to genus lumped to family.
- Scombridae all larvae identified to this family or constituent taxa (except *Scomber japonicus*) were reexamined and reassigned.
- Pleuronectiformes all specimens of this category (originally called "flatfish") were examined and reidentified.
- Citharichthys spp. all larvae identified to species were lumped to the genus except C. stigmaeus; category includes larvae of Etropus spp.
- Citharichthys stigmaeus includes larvae larger than ca. 4.5 mm; smaller larvae are in Citharichthys spp.
- Paralichthys spp. all specimens of this genus were examined and most were assigned to P. californicus or Xystreurys liolepis.
- Xystreurys liolepis originally misidentified as Paralichthys californicus; all specimens reidentified.
- Lepidopsetta bilineata specimen checked; originally identified as Psettichthys melanostictus.

Pleuronichthys spp. - all larvae of this genus and constituent species were examined and assigned to species; residuals are small, poorly preserved or unavailable specimens.

Psettichthys melanostictus - all specimens examined.

COMPUTER ENTRY AND EDITING

Each taxon on the original identification sheets was given a 3-digit code based on the list of codes in Haight et al. (1979). Taxon codes and counts from these sheets were keypunched by cruise and station, along with pertinent station and tow data and entered into the VAX 11/780 computer at the University of California, San Diego, Computing Center. After entries were completed for an entire year, print-out listings of taxa and counts on each station were compared with the original data sheets to eliminate keypunch errors. Next, data in the file were cross-checked with data on an existing file which contained: station and tow data; numbers of eggs of sardine, anchovy, and saury; numbers of larvae of sardine, anchovy, hake, jack mackerel, and Pacific mackerel; total number of fish eggs; and total number of fish larvae.

Discrepancies in ichthyoplankton data in these two files were corrected by inspecting original records from the sorting laboratory, the original ichthyoplankton identification sheets, and the samples themselves. Station and tow data discrepancies between the two files were corrected by reviewing ships' logs and deck tow sheets, original records from the sorting laboratory, cruise announcements, publications, header information on the ichthyoplankton identification sheets, and station plots generated for each cruise. Eventually all station and tow data were checked by comparing these sources.

The corrected ichthyoplankton data base was then examined statistically and outliers were found and checked as above. Distributional plots were then prepared for each taxon and these were checked by reviewing the data sources mentioned above and by examining archived specimens. A listing of each taxon by station (Table 4) was produced, which became the primary document for subsequent checks. Misidentifications found in geographic outlier checks and other misidentifications and data problems discovered in the course of examining archived samples resulted in several iterations of Table 4. Finally, totals in Table 4 were checked against annual summaries of incidence and abundance (Tables 2 and 3). Ecological analyses of the data were conducted concurrently with editing procedures and provided cross-checks that allowed correction of errors.

SPECIES SUMMARY

Larvae of northern anchovy (Engraulis mordax) represented 60% of all fish larvae taken on CalCOFI cruises during 1962 and numbered eight times as many as the gonostomatid Vinciguerria lucetia, the next most abundant species with 7% of the total
larvae (Tables 2, 3). Northern anchovy also ranked first in incidence; V. lucetia ranked third. The next most abundant species was Pacific hake, Merluccius productus, with 6% of total larvae; it ranked 7th in occurrence. The myctophid Triphoturus mexicanus ranked 4th in abundance (4%) and 2nd in occurrence. A deepsea smelt, Leuroglossus stilbius, ranked 5th in abundance (4%) and 8th in incidence. Larvae of Sebastes spp., a composite of about 70 species, ranked 6th in abundance and 5th in incidence. Larvae of jack mackerel (Trachurus symmetricus), sanddabs (Citharichthys spp.), the myctophid Stenobrachius leucopsarus, and the gonostomatid Cyclothone spp. completed the 10 most abundant taxa ranking 7th, 8th, 9th, and 10th, respectively; in incidence, these taxa ranked 11th, 10th, 13th, and 4th, respectively. These 10 top-ranking taxa contributed 90.5% of all larvae taken during 1962. The remaining 9.5% was represented by 129 taxa plus the unidentified and disintegrated categories. Of the 10 taxa, 5 were midwater species, 3 were coastal demersal species or generic groupings, and 2 were coastal pelagic species.

EXPLANATION OF TABLES

Table 1 - This table lists by cruise the pertinent station and tow data for 1962, the volume of water filtered and standard haul factor for each tow, the percent of sample sorted, and the total numbers of fish eggs and larvae. CalCOFI cruises are designated by four digits; the first two indicate the year and the second two the month. Within each cruise the data are listed in order of increasing line and station number (southerly and seaward directions); the order of station occupancy is shown on the station charts (Figures 2-5). are designated by two groups of digits; the first set indicates the line and decimal fraction and the second set indicates the station on the line. Time is listed Pacific Standard Time at the start of each tow in 24-hour designation. Methods for determining tow depth, volume of water strained, standard haul factor, and percent sorted were described in the methods The values for total fish eggs and larvae section. represent raw counts (unadjusted for percent sorted or standard haul factor). Ship codes are as follows: AX, Alexander Agassiz; BD, Black Douglas; HO, Horizon; PT, Paolina T.

Table 2 - This table lists pooled occurrences of all larval fish taxa taken during 1962 in ranked order.

- Table 3 This table lists pooled counts of all larval fish taxa taken during 1962 in ranked order. Numbers are adjusted for percent sorted and standard haul factors.
- Table 4 This table gives numbers of fish larvae for each taxon, listed by station and calendar month in which the tow was taken. Counts are adjusted for percent of sample sorted and standard haul factor. The orders are listed in "phylogenetic" sequence modified from Nelson (1984). Subtaxa within each order are listed alphabetically. Page numbers for each taxon are given in the index at the end of the report.
- Table 5 This table is a summary of pooled occurrences of all larval fish taxa taken on CalCOFI surveys from 1961 to 1969. Taxa are listed in the same order as in Table 4.

ACKNOWLEDGMENTS

Lois Hunter and David Kramer originally identified from CalCOFI cruises of 1962. Ronald Whyte coded each larval fish taxon or type and Rita Ford entered them into the computer. Cindy Meyer, Larry Zins, and James Ryan provided programming assistance. Dorothy Roll designed the CalCOFI data acquisition system and provided data processing support. Ken Raymond, Roy Allen, and Henry Orr helped with graphics and production of the report. Lorraine Prescott and Diane Forsythe prepared the manuscript for printing. Paul Smith determined statistical outliers, provided assistance during geographical outlier checks and offered helpful suggestions throughout the project. Izadore Barrett, Director of the Southwest Fisheries Center and Reuben Lasker, Chief, Coastal Fisheries Resources Division, SWFC, provided the support critical to the completion of the project. James Thrailkill planned CalCOFI surveys and supervised cruises, data handling, and plankton sorting from 1949 to 1986 and is largely responsible for the high quality of these operations. Without the vision and direction of Elbert Ahlstrom and Elton Sette and the dedicated efforts of the many people who collected, processed, and analyzed the samples, this data base would not exist.

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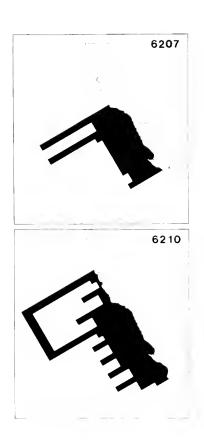


Figure 1. Composite arrangement of diagrammatic charts showing areas sampled on each CalCOFI cruise during 1962.

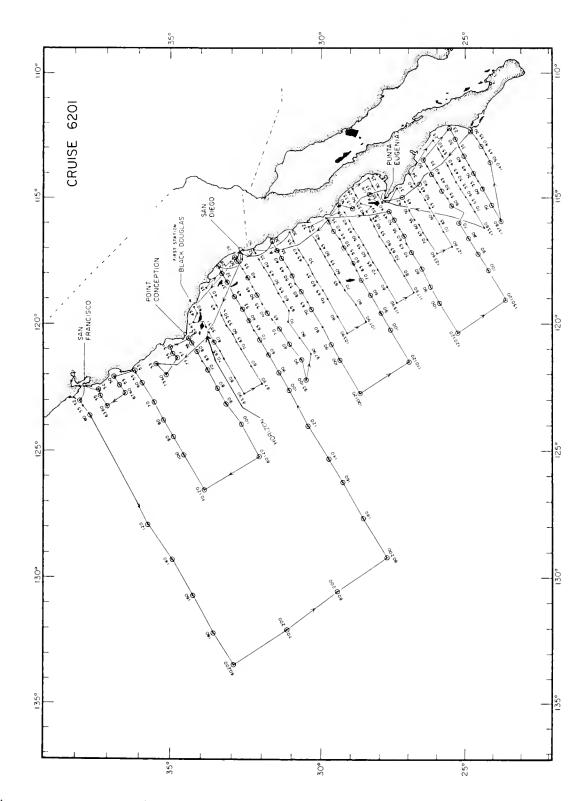


Figure 2. Station pattern for CalCOFI Cruise 6201 showing tracks for each vessel. Stations with plankton tows are indicated by a dot; circles designate hydrographic stations. Figures 2-5 modified from charts in Univ. of Calif., SIO (1962, 1963) to include only those stations listed in Table 1 of this report.

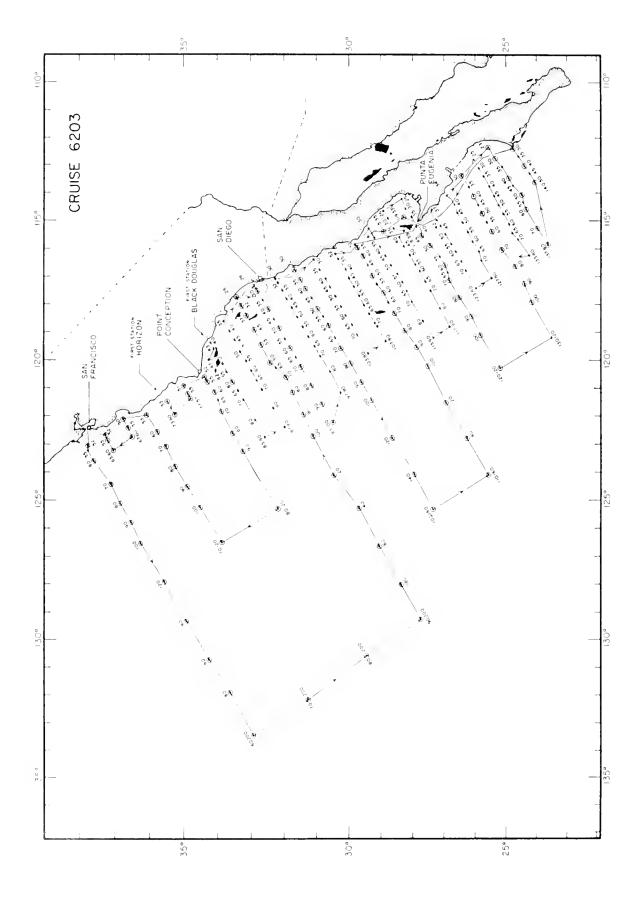


Figure 3. Station pattern for CalCOFI Cruise 6203. Symbols as in Figure 2.

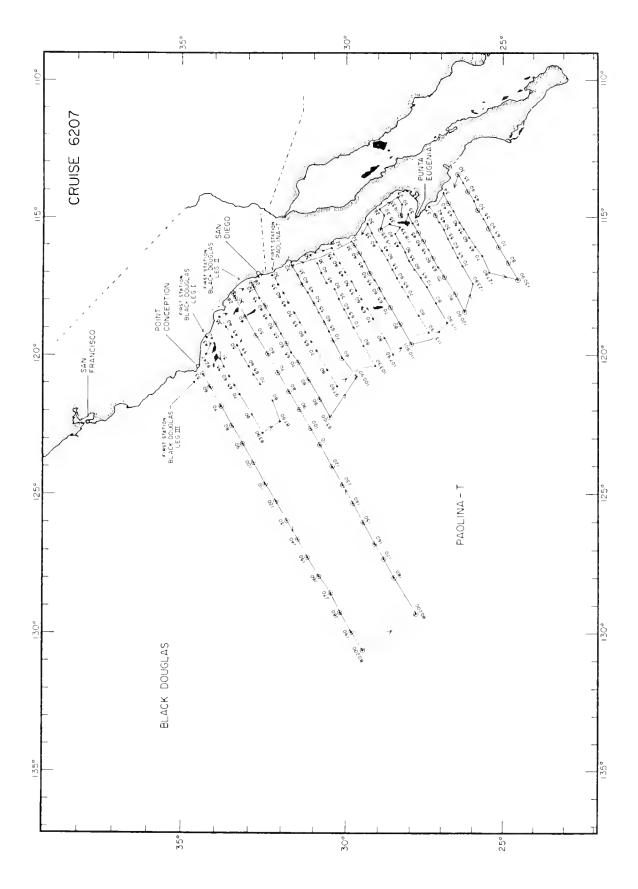


Figure 4. Station pattern for CalCOFI Cruise 6207. Symbols as in Figure 2.

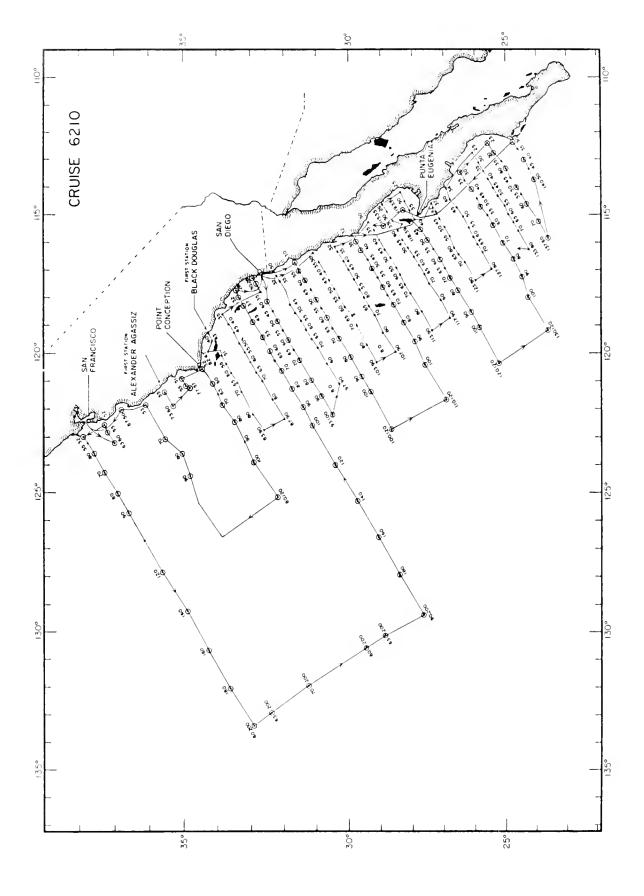


Figure 5. Station pattern for CalCOFI Cruise 6210. Symbols as in Figure 2.

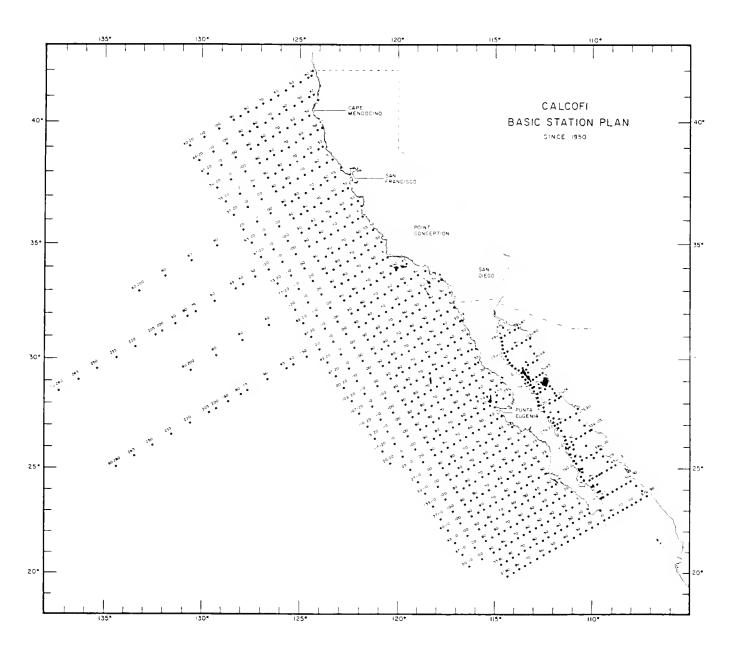


Figure 6. The basic station plan for CalCOFI cruises from 1950 to the present.

TABLE 1. Station and plankton tow data for CalCOFI cruises in 1962. Counts for fish eggs and larvae are not adjusted for standard haul factor or percent of sample sorted.

CalCOFI Cruise 6201

Total Eggs	1069 1069 1070 1070 1070 1070 1070 1070 1070 107	
Total Larvae	4 4 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
Percent Sorted		
Stand- ard Haul Factor	1122 1222	
Vol. Water Strained (cu. m)	24	
Tow Depth	1008 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
Time (PST)	10000000000000000000000000000000000000	
Tow Date yr. mo. day	622 001 123 625 001 125 625 001 125 625 001 125 625 001 126 625 001 127 001 128 625 001 128 625 001 125 625 001 12	
Ship Code		
Long.(W) deg. min.	123 02.0 123 38.0 123 16.0 123 38.0 123 144.5 133 144.5 133 28.0 122 37.0 122 37.0 122 44.5 122 37.0 122 44.5 122 80.7 122 80.7 123 28.0 124 26.8 125 89.5 120 38.5 121 33.5 121 33.5 121 33.5 122 35.1 123 36.0 123 36.0 123 38.0 123 38.0 123 38.0 123 38.0 123 38.0 123 38.0 123 38.0 123 38.0 123 38.0 123 38.0	
Lat.(N) deg. min.	2323333344444444555566667777733333333333333	
Station	52.0 120.0 120.0 140.0 180.0 200.0 200.0 55.0 60.0 60.0 55.0 60.0	
Line	60000 600000 600000 600000 600000 600000 6	

CalCOFI Cruise 6201

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Long.(W) deg. min.	20 45. 21 06. 21 26. 22 08.	22 47. 18 37. 18 58.	19 19. 19 39. 20 04.	4040	17 46. 18 03.	18 23. 18 57. 19 27.	19 53. 20 18. 20 39.	21 16. 21 57.	24 01. 25 19.	27 39. 29 11.	17 21. 17 31.	16 21.	18 52.	19 34.	20 12.	21 26. 22 14.	17 07.
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Tow Date yr. mo. day	22 00 00 00 00 00 00 00 00 00 00 00 00 0	000000 000000 000000	00000000000000000000000000000000000000	00000000000000000000000000000000000000	00000000000000000000000000000000000000	000000000000000000000000000000000000000	00000000000000000000000000000000000000	62 02 11 62 02 11 62 02 11 62 02 11 62 02 11 62 02 10 62 02 10 62 02 10
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Long.(W) deg. min.	17 15. 17 30. 17 50. 18 08.	18 49. 19 10. 19 30. 20 33.	21 11. 16 46. 17 07. 17 27.	18 29. 18 47. 19 10.	20 09. 20 51. 21 28. 22 45.	16 45. 17 07. 17 26. 18 03.	18 23. 19 04. 19 44. 20 23.	116 22.5 116 42.0 117 02.0 117 21.2 117 42.0 118 21.0 118 41.0
Lat.(N) deg. min.	2 12.0 2 06.0 1 56.1 1 36.0	1 25. 1 05. 1 05.	231.00	0 2 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	89999	0 36. 0 36. 0 26. 0 26.	0 07. 9 26. 9 07.	20 22.0 30 21.5 30 11.0 29 51.0 29 21.0 29 21.0 28 48.0
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	Total Larvae	1442 1700 1700 1700 1700 1700 1700 1700 170
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CalCOFI Cruise

Total Eggs Total Larvae Percent Sorted 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 22.68 22.90 22.90 22.90 22.90 22.90 22.90 22.90 23.90 Stand-ard Eaul Strained (cu. m) voi. Water Tow Depth 135 1339 1339 1339 1442 1442 1442 1443 1444 1440 1330 1447 Time (PST) Tow Date yr. mo. day Ship Code Long.(W) deg. min. deg. 1115 1115 11115 11115 11115 11115 11113 Lat.(N) deg. min. 006.0 124.5 124.5 124.5 124.5 124.5 124.5 126.6 Station 555.0 660.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0 Line 333.0 333.0 333.0 333.0 337.0 337.0 337.0 440.0 440.0

CalCOFI Cruise 6203

Total Eggs	217	9	36	51	·	13	11	41	2 Y Q	142	179	159	26	9/	4 0	83	29	17	43	3334	ر د د	09	9	200	~ u	400	—	232	7	37	4	771	-	47	4	403	8	82
Total	19	79	21	7.	10	, C	4	28	47	2	392	7	312	Э, С	711	10	2.2	29	15	1.1	9 00	96	265	9	50. 4.3	7.00	9	11	47	130	130	m <		7.5	α	~	260	₹
Percent Sorted	100.0		•	•	, ,				•						•	• (•				•	•	•			•
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Long.(W) deg. min.	123 04.0	23 37.	24 25.	25 05.	26 31	27 54.	29 19.	30 41.	31 54.	23 20.	22 52.	23 12.	22 05.	22 25.	22 45.	22 23.	23 06.	23 49.	24 30.	25 14.	26 30.	21 28.	$\frac{21}{21}$ 56.	20 56.	21 13.	21 22.	20 48.	21 08.	21 28.	21 50.	22 35.	23 16.	25 17.	0 34.	,,,,	. 77 6 9 34	0 07.	0 24.
Lat.(N) deg. min.	37 48.2	7 36.	7 07.	6 54.	5 34.	5 35.	4 57.	4 16.	38.	2 55.	7 11.	7 02.	6 46.	6 38.	6 30.		5 32.	5 15.	4 53.	4 32.	3 53.	5 31.	5 17.	5 02.	4 54.	4 48.	4 29.	4 06.	4 00.	3 54.	3 33.	3 13.	11.	9 ZB.	. Y . V	4 L4.	3.52	3 44.
Station	52.0		0	0			40.	60.	80.	20 5		0	0.	٠. د	٠. ٥٠	¹⊂		0	90.	0.0	20.	500		-	5.		٠	0	5.	0.	0	90.	· .	00	:	· -	;	
Line	0.09		0	· ·			0	0	0	- -	 . m	3.	7.	7				0	0	0.	· ·			7	7				0	0.	0	0	· .	٠ د	, ,		, ~	· ~

CalCOFI Cruise 6203

Total	Eggs	404	326	176	5 T	605	236	211	48	35	45	£ 23	30.7	25	523	1620	67.1	274	131	351	502	222	103	110	155	257	1.7	` :	- :-	551	995	154	120	292	5653	100	223	25.86	455	167	1048	
fortal	Larvae	260	199	ກີ	. E	429	472	310	151	334	1407	273	920	926	256	5	1573	2.7.1	901	108	157	3/3	- E	99	32	35	31	T \$	2283	10	1076	2.3.2	300	332	456	/ 17-1	000		376	1.54	602	
Percent	Sorted				100.0																		0.001			•												•		•	0.001	
Stand- ard	Factor	. 9	6.	J. 0		. ~	_		6.	٧.	0.	₽.		, 0		9,	6.	0.	3	_ `		٠.	`.	jæ	6	9.	٤,	: ب	•	. 6	6.	Φ,	æ :	æ, ₁	ن د	٠,	:	, <	C	•	2.20	
Vol. Water	cu. m	465	465	4/0	467	448	450	440	239	519	463	456 200	065	0.7	444	508	476	466	522	459	464	4/0	9 7 7 7 7 7	486	490	530	486	512	010	470	464	4119	495	485	476	496	4118	0/5	461	700	18.4	
Tow		135	138	36	32.	143	140	140	9	2	4	140	n:	7/1/	~	133	138	140	133	143	98	141	2 C V -	336	144	138	142	137	171	137	138	140	140	36	E .	131	0 P C	0.7	133	36.	41	
		1821	2131	0006	0446	1656	1431	1201	0938	9990	0420	0201	2316	1331	9070	2341	2056	1541	9111	0421	9110	2026	9071	9500	9560	2216	0646	1836	0411	0341	9690	9160	1216	1456	1801	2031	2341	0770	17/0	1001	0844	
Post Date	yr. mo. day	2 04	2 04	200	700	2 04	2 04	2 04	2 04	2 04	2 04	2 04	70 70 70 70	70	200	2 04	2 04	2 04	2 04	2 04	2 04	2 04	700	200	2 04	2 04	2 04	2 04	700	200	2 04	2 04	0.4	2 04	70	2 04	700	7 6	70 0	3 0	62 04 17	
Chin		GE	OSI	22 23 24 25	2 E	2 2	3 3 3 3	BD	13D	BD	3	≘ :	9	<u> </u>	E E	2	HO	HO	110	011	9	9	2 2	2 2	2	HO	OII	2	9	<u> </u>	3	3	E	HD	≘ :	9	Ê		3 3		Ê	
(M) 800 (deg. min.	20 45.	21 06.	21 26.	7.7	18 37.	18 58.	19 19.	19 39.	20 00.	20 21.	20 41.	21 02.	21 43.	17 46	18 02.	18 23.	18 54.	19 25.	20 06.	20 17.	20 37.	21 10.	22 Al	24 06.	25 16.	26 37.	28 00.	29 14.	17 21	17 51.	111 12.	18 32.	18 52.	19 12.	19 34.	19 53.	20 -4.	20 24.	20 04	117 08.5	
3	deg. min.	3 34.	3 24.	3.14.	2 53.		3 40.	3 30.	3 20.	3 10.	3 00.	2 49.	2 39.	2 19.	. 00 r	. 6	3 10.	2 55.	2 42.	2 28.	2 16.	1 57.	1 44.	. 62 -	0 28.	9 42.	9 03.	1 22.	7.46.	2 50.	2 40.	2 30.	2 20.	2 10.	2 00.	50.	70.	.00.	10.		32 16.0	
	station	0	5.	0		5 L		5	0	5	0	٠ د د	0		, : a				3.	0.	٠ ا	0				40	.09	80.	000	: =		=	5	=	٠ :	=			= c		30.0	
	Line S	3.	3.	۳,	ب د			7		7.	7.			· :				0	0	Ξ.	0.	0				0	ö	<u>.</u>		; ~	, -	~	3	÷	۳,	e :	<u>.</u> د	÷:	÷.		93.0	

Total Eggs	57 572 743 1549 369	63 13 92	90 73 159 256	9676	16 29 78 47	64 27 30	41926	102 31 62 21 47	118 202 1375 260 35 20 20 26	35 175 551
Total Larvae	84 294 108 1408 460	1 2 2	17 11 00 26	2 / 2 5		0996			18 360 472 280 280 256	
Percent Sorted	00000	50. 25. 00.	0000		0000	0000		00000	100.0 100.0 100.0 100.0	000
Stand- ard Haul Factor	44.644	.20.1	0.088	 	7.88.6	8977	÷4.6°	0.0000	2.50 3.26 3.11 2.92 2.84 2.91	8.7
Vol. Water Strained (cu. m)	$\omega\omega \sim \omega \omega$	564	988		9707	9671	5842	22270	535 4447 4477 4777 484	788
Tow Depth	139 140 139 139	4444	4466	ന ന ന 4	6	4004	7 4 6 6 6 6	mmmmm	134 141 139 140 135 138	
Time (PST)	72 52 25 02 15	90 63 40 13	70 12 83 22	15 61 92 44	933	93	130 12 34 60	823 93 93 93 93	0025 0846 0701 0401 2316 2026	73 44 20
Tow Date yr. mo. day	2 0 4 1 2 0 4 1 2 0 4 1 2 0 4 1 2 0 4 1 2 0 4 1 1 2 0 4 1 1 2	2 04 1 2 04 1 2 04 1 2 04 1	22 0 0 4 1 2 2 0 0 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22 04 1 2 04 1 2 04 1 1 4 1	2 0 4 1 2 0 4 1 2 0 4 1 2 0 4 1 1 2 0 4 1 1 2 0 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 0 4 1 2 0 4 1 2 0 4 1 1 0 0 4 1 1 0 0 4 1 1 0 0 4 1 1 0 0 4 1 1 0 0 4 1 1 0 0 4 1 1 0 0 0 4 1 1 0 0 0 0	2 0 4 1 2 0 4 1 2 0 4 1 2 0 4 1 1 2 0 4 1 1 2 0 4 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	2 0 4 1 2 2 0 4 1 2 2 0 4 1 1 2 0 4 1 1 2 0 4 1 1 2 0 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	62 04 20 62 04 21 62 04 21 62 04 21 62 04 20 62 04 20	2 04 2 2 04 2 2 04 2
Ship Code	8D 8D 8D 8D 8D 8D	8D 8D 8D 8D	BB BB BB	HO HO HO HO	0 0 0 0	00000	80 80 80 80	8D 8D 8D 8D 8D	8D 8D 8D 8D 8D 8D 8D	8D 8D 8D
Long.(W) deg. min.	17 16. 17 30. 17 48. 18 08.	18 49. 19 10. 19 30. 19 52.	20 24. 21 10. 16 45. 17 07.	17 26. 17 48. 18 09. 18 25.	18 45. 19 11. 20 07.	20 46. 21 25. 22 46. 24 05.	25 20. 16 24. 16 45. 17 05.	17 44. 18 05. 18 23. 18 44.	119 47.0 116 11.0 116 22.5 116 44.8 117 02.0 117 23.5	18 01. 18 21. 18 41.
Lat.(N) deg. min.	2 12. 2 04. 1 56. 1 46.	1 25. 1 15. 1 05. 0 54.	0 35. 0 15. 1 41.	1 21. 1 10. 1 00. 0 49.	0 39. 0 25. 0 16.	78 19. 7 59.	7 22. 1 06. 0 56. 0 43. 0 36.	0 26. 0 16. 0 08. 9 56. 9 45.	29 24.5 30 25.8 30 20.0 30 06.8 29 50.5 29 41.0	9 32. 9 21. 9 11.
Station	0.00	0000	0000	0000	0000	00000	80. 30. 40.	00000	80.0 32.0 40.0 50.0 55.0	000
Line	77.7.	7.7.7	97.		0000	0000	00000	00000	103.0 107.0 107.0 107.0 107.0	07. 07. 07.

Total Eggs	1126 1136 1136 1337 1337 1499 1499 1499 1499 1538 1133 1339 1499 1538 1639 1639 1639 1639 1639 1639 1639 1639
Total Larvae	1 1230 1
Percent Sorted	
Stand- ard Haul Factor	22222222222222222222222222222222222222
Vol. Water Strained	4730004500000000000000000000000000000000
Tow Depth	1 111111111111111111111111111111111111
Time (PST)	00000000000000000000000000000000000000
Tow Date yr. mo. day	6622 004444 005 005 005 005 005 005 005 005
Ship Code	
Long.(W) deg. min.	1119 20.5 1115 51.0 1116 35.0 1116 35.0 1117 37.22 1117 37.22 1118 19.8 1118 19.8 1118 19.8 1118 19.8 1118 19.8 1119 33.0 1119 33.0 1119 14.0 1119 14.0
Lat.(N) deg. min.	288 55. 25. 25. 25. 25. 25. 25. 25. 25. 25.
Station	11000000000000000000000000000000000000
Line	20000000000000000000000000000000000000

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Total Eggs	200 200 200 201 201 201 201 201 201 201
Total Larvae	155 33 7 7 8 8 8 7 7 8 8 8 1 1 1 1 1 1 1 1 1 1
Percent Sorted	0.000000000000000000000000000000000000
Stand- ard Haul Factor	12522222222222222222222222222222222222
Vol. Water Strained (cu. m)	14888888888888888888888888888888888888
Tow Depth	111111111 11111111 11111111 11111111 1111
Time	00114 00114 00111
Tow Date yr. mo. day	622 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 223 004 225 00
Ship Code	800 BBD BBD BBD BBD BBD BBD BBD BBD BBD B
Long.(W) deg. min.	1115 14.0 1115 312.3 1116 36.3 1116 36.3 1117 099.2 1117 099.2 1118 14.0 1119 05.0 1119 05.0 1119 05.0 1115 11.5 1115 11.5 1115 11.5 1115 24.0 1117 09.0 1118 24.0 1119 09.0 1119 09.0 1119 09.0 1119 09.0 1119 12.0 1113 04.0
Lat.(N) deg. min.	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Station	0.000.000.000.000.000.000.000.000.000.
Line	11220000000000000000000000000000000000

CalCOFI Cruise 6203

Total Eggs	31 61 106	32 57 222	176	19	23	995 196	47	79	72 40	34	30
Total Larvae	110 113 186	36	96.	72	31	34	75	4.5	12 90	101	55
Percent Sorted	100.0	100.0	0.001	0.001	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Stand- ard Haul Factor	2.70 2.86 2.70	2.82 2.86 3.30	.0	1000	9.0	8 4	ω, α	ω.	4.8	9.	.5
Vol. Water Strained	488 475 487	478 483 432	477	493	488	507	501	496	272 507	518	539
Tow Depth	132 136 132	138	139	141	144	142	140	140	68 144	137	138
Time (PST)	0246 0516 0746	1016	1916	0302	0801	1356	1801	0516	$0633 \\ 0341$	0121	1177
Tow Date yr. mo. day	62 04 28 62 04 28 62 04 28	22 04 2 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 04 2	2 04 2 2 04 2 2 04 2	2 04 2	2 04 2	2 04 2	2 04 2	2 04 3 2 04 3	2 04 3	2 04 2 2 04 2
Ship Code	BD BD BD	88	B B	988	2 R	1 1 1 1 1 1	989	99	H 0	8	28
Long.(W) deg. min.	114 05.5 114 26.5 114 46.0	15 06 15 25	16 17 12 20	12 46	13 29	4 05	14 36	15 52	12 24 $12 42$	3 01	3 39
Lat.(N) deg. min.	25 25.2 25 15.5 25 06.8	4 4 4 5 4 9 4 9 9 9 9 9 9 9 9 9 9 9 9 9	4 14	5 21 5 0 9	4 55	4 30	4 21	37	4 46 4 35	4 25	4 L4 4 03
Station	45.0 50.0 55.0	0000			0 6	0 0				0.	0.0
Line	133.0 133.0 133.0		, m , c	37.	37.	37.	37.	37.	40. 40.	40.	40.

CalCOFI Cruise 6207

Total Eggs	4 7 4 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		35 51 108		13 5 5		13	20	∞ m c	70 0	393			9		2 4	22	
Total Larvae	87 18 7 5	14 5		25 133 44						3 – 6	106		13 16				17	
Percent Sorted	100.0 100.0 100.0	000	8000	900		200		50.		15.	000	15.		000.	000.	900	000	00.
Stand- ard Haul Factor	2.45 2.67 2.60 3.05	0.0.0	7.5.4	. 8	0.99	1.4.	.5	7.	œ r. A	0,00		404	6.9	.0	و.د.	. 6	9.9	. 6
Vol. Water Strained (cu. m)	581 529 539 459	9 7 8	522	000	4 2 8	4 9	- ℃	9	0 % 6	4 C 8		~ m ←	25	96	9	29	22	35
Tow Depth	142 141 140 140	60 4 6	mmm	⇔ ⇔	464	\mathcal{L}	ე დ 4	ω	460	ე 4 რ	141	J 4 C	നന	40	ω	40	44	44
Time (PST)	0216 0801 1646 2251	51 20 83	05 61 21	80 83 63	21 81 11	21	22 22	45	94	40 64 41	14	300	12 50	90	53	75	62	63
Tow Date yr. mo. day	62 08 20 62 08 20 62 08 20 62 08 20	2 08 2 2 08 2 08 2 08 2 2	2 08 2 2 08 2 2 08 2	2 08 2 2 08 2 2 08 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2 07 1	2 07 1 2 07 1 2 07 1	2 07 1 2 07 1	2 07 1 2 07 1 2 07 1	2 07 1 2 07 1 2 07 1	2 07 1 2 07 1	2 07 1 2 07 1 1 70 2	2 07 1 2 07 1	2 07 1 2 08 2	2 08 2 2 08 2			
Ship Code	8D 8D 8D 8D	BD BD	80 80 80 80	BD BD	80 80 80	80	BD CR	BD BD	BD 6	BD 0	8D 8D	888	8 B B	BD BD	BD BD	BD BD	BD BD	BD BD
Long.(W) deg. min.	120 41.0 121 09.0 121 51.0 122 32.0	23 13. 23 53. 24 37.	25 15. 25 56. 26 36.	27 17. 27 56. 28 32.	29 16. 29 58. 30 35.	19 58. 19 21.	19 34. 20 07. 20 24.	20 45. 21 05.	21 26. 22 06.	22 46. 18 37. 18 58.	19 19.	20 00. 20 21. 20 41.	21 02. 21 40.	22 23. 17 46.	17 53. 18 35.	19 16. 19 57.	20 38. 21 19.	21 59. 22 39.
Lat.(N) deg. min.	34 22.0 34 09.0 33 49.0 33 28.0	3 09. 2 49.	2 09. 1 49. 1 29.	1 08. 0 49. 0 26.	0 09. 9 48. 9 28.	4 13.	3 52.	3 34.	3 14.	3 49.	3 29.	3 00. 2 49.	2 38. 2 16.	2 02. 3 28.	3 25. 3 04.	2 45. 2 25.	2 05. 1 45.	1 25. 1 05.
Station	53.0 60.0 70.0 80.0	90.		50. 60. 70.	90.0	47.	ت	50.	000	0 00		. 0 տ		080	00	00	000	00
Line S	80.0 80.0 80.0	000		000	000	35.	 n m m	mm					7:	7.	000	00	00	00

Total Eggs	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Total Larvae	111 118	76
Percent Sorted		00
Stand- ard Haul Factor		. 7
Vol. Water Strained (cu. m)	, 4000000000000000000000000000000000000	_
Tow Depth (m)	. HITTHITHITHITHITHITHITHITHITHITHITHITHIT	
Time (PST)	. 0010001011100011100001100000000000000	14
Tow Date yr. mo. day	6652 007 117 118 118 118 118 118 118 118 118 11	2 07 2
Ship		ΡŢ
Long.(W) deg. min.	6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	16 24.
Lat.(N) deg. min.	000000088872222211110022111111100011111100000 42042042422422111110021111111100011111100000 4204204242242210000000004221000042200004220004200042000042000042000000	1 06.
Station	11111111111111111111111111111111111111	0
Line 3	00000000mmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	03.

Total Eggs	23 53 54 55 66 67 67 67 67 67 67 67 67 67	
Total Larvae	08011484471 60 000004 11410007 140 46007 10001148607 100017 10007 100091104	
Percent Sorted		
Stand- ard Haul Factor	22222222222222222222222222222222222222	
Vol. Water Strained (cu. m)	0.000000000000000000000000000000000000	
Tow Depth	11111111111111111111111111111111111111	
Time (PST)	119916 119219 119219 119229 119229 119229 119239 119239 119239 119336 119336 119336 119336 119336 119336 119336 119336 119336 119336 119336 119336 119336	
Tow Date yr. mo. day	622 07 233 652 07 233 652 07 233 652 07 233 652 07 233 652 07 223 652 07 223 652 07 223 652 07 223 652 07 224 652 07 225 652 07 225 652 07 224 652 07 225	
Ship Code		
Long.(W) deg. min.	1116 40.5 1117 22.5 1117 22.5 1117 22.5 1118 19.5 1118 19.5 1119 40.5 1119 22.5 1119 22.0 1119 22.0 1119 22.0 1119 22.0 1119 23.0 1117 19.0 1118 19.0 1118 19.0 1118 18.0 1119 35.0 1117 19.0 1118 18.0 1117 19.0 1118 18.0 1117 19.0 1118 18.0 1117 19.0 1117 19.0 1118 18.0 1117 19.0 1117 19.0 1117 19.0 1117 19.0 1117 19.0	
Lat.(N) deg. min.)
Station	#4488866789888488866789888888888888888888	,
Line	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

6207
Cruise
CalCOFI

Total Eggs	2010 2010	
Total Larvae	2	
Percent Sorted		
Stand- ard Haul Factor	WGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	
Vol. Water Strained (cu. m)	20000000000000000000000000000000000000	
Tow Depth	1111111 111111 1111111 1111111 11111111	
Time (PST)	11822 12222 12222 13222 12222 12222 12222 12222 12222 12222 12222 12222 12222 12222 12222	
Tow Date yr. mo. day	652 07 255 652 07 22 23 33 33 33 33 35 25 25 25 25 25 25 25 25 25 25 25 25 25	
Ship Code		l i
Long.(W) deg. min.	1115 55.5 1111 5 25.5 1111 5 25.5 1111 7 15.5 1111 7	
Lat.(N) deg. min.	225 23 23 25 25 25 25 25 25 25 25 25 25 25 25 25	
Station	82000000000000000000000000000000000000	•
Line S	27777777777777777777777777777777777777	•

TABLE 1. (cont.)

36 103 43 18 10 60 34 30 Total Eggs Total Larvae 17 13 76 8 30 13 266 226 Percent Sorted 100.0 100.0 100.0 100.0 100.0 100.0 Stand-ard Haul Factor 3.00 2.81 2.73 2.68 2.58 2.58 2.58 2.59 2.59 Vol. Water Strained (cu. m) 471 502 518 521 534 553 547 546 Tow Depth (m) 141 141 139 138 141 141 139 6207 Time (PST) 0036 2151 1841 1516 1116 0851 0431 2226 CalCOFI Cruise Tow Date yr. mo. day 29 28 28 28 27 27 07 07 07 07 07 07 62 62 62 62 62 63 63 Ship Code Long.(W) deg. min. 07.0 26.5 44.0 04.0 24.0 42.7 42.7 17.5 1114 1115 1115 1115 1116 Lat.(N) deg. min. 250.0 27.0 27.0 119.0 29.2 Station 440.0 550.0 550.0 60.0 770.0 90.0 Line

CalCOFI Cruise 6210

Total Eggs	200 370 370 370 370 370 370 370 370 370 3
Total Larvae	4 1 4 2 4 8 1 2 4 8 1 4 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
Percent Sorted	00000000000000000000000000000000000000
Stand- ard Haul Factor	22222222222222222222222222222222222222
Vol. Water Strained (cu. m)	45500000000000000000000000000000000000
Tow Depth (m)	11111111111111111111111111111111111111
Time (PST)	00000000000000000000000000000000000000
Tow Date yr. mo. day	652 10 18 652 10 18 652 10 18 652 10 19 652 10 19 652 10 25 652 10 25 652 10 25 652 10 25 652 10 10 652 10 10 653 10 10 653 10 10 654 10 10 655 10 10 657 10 10 657 10 10 658 10 10 658 10 10 659 10 10 650 10 10 651 10 10 652 10 10 653 10 10 653 10 10 654 10 10 655 10 10 657 10 10
Ship	BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB
Long.(W) deg. min.	123 01 123 15.0 123 3 6.8 123 3 6.8 125 04.0 127 59.0 127 59.0 127 59.0 123 27.0 123 27.0 124 27.0 125 27.0 127 27.0 128 5.0 129 27.0 120 27.0 121 27.0 122 27.0
Lat.(N) deg. min.	33333333333333333333333333333333333333
Station	2000 1100
Line	660.00 660.00 660.00 660.00 660.00 660.00 660.00 660.00 660.00 660.00 660.00 660.00 777.00 777.00 777.00 777.00 777.00 777.00 777.00 777.00 777.00 880.00 880.00 880.00 880.00 880.00 880.00 880.00 880.00 880.00 880.00

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LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֓֓֓֓
LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֓֓֓֓
LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֓֓֓֓
LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֜֜֓֓֓֓
	֓֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֜֜֓֓֓֓
LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֜֜֓֓֓֓
LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֜֜֓֓֓֓
LOPI	֓֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֓֓֜֜֜֜֜֜֜֓֓֓֓֜֜֜֜֜֜֓֓֓֓

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CalCOFI Cruise 6210

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Long.(W) deg. min.	1119 12.5 1119 32.0 1120 26.0 121 10.5 1121 10.5 1117 26.8 1118 47.5 1119 62.0 1119 62.0 1118 41.0 1118 41.0	16 58.
Lat.(N) deg. min.	331 18.0 331 18.0 330 331 18.0 330 38.0 330 15.5 331 18.0 330 15.5 331 21.7 330 15.5 330 25.0 330 35.0 330 35.0 350 350 35.0 350 350 35.0 350 350 350 350 350 350 350 350 350 350	9 16.
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CalCOFI Cruise 6210

Total Eggs	00000000000000000000000000000000000000	
Total Larvae	22 216 216 217 218 311 311 311 311 32 32 33 33 34 34 35 36 37 37 37 37 37 37 37 37 37 37 37 37 37	
Percent Sorted		
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Long.(W) deg. min.	1117 19 19 1118 58 10 118 58 10 11	
Lat.(N) deg. min.	28 9 06 5 5 6 5 5 6 5 5 6 5 5 6 5 6 5 6 6 5 6	
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Total Eggs	200 200 200 155 1699 100 100 100 100 100 100 100 1
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Percent Sorted	
Stand- ard Haul Factor	22222222222222222222222222222222222222
Vol. Water Strained (cu. m)	0.000044400000000000000000000000000000
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Ship Code	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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Lat.(N) deg. min.	225 225 225 226 22 226 22 226 22 226 22 226 22 226 22 22
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Line	1200 1200 1200 1200 1200 1200 1200 1200

CalCOFI Cruise 6210

Total Eggs	4.0	6	99	411	16	54	9	7	179	7	113	195	73
Total Larvae	4 0	1	m	13	56	18	11	13	59	25	16	17	7
Percent Sorted	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Stand- ard Haul Factor	2.70	2.72	2.76	3.05	2.91	2.86	2.86	2.77	2.67	3.00	2.75	2.78	3.26
Vol. Water Strained	528 485	499	493	470	486	490	200	497	365	485	206	510	434
Tow Depth	142	136	136	144	142	140	143	138	98	146	139	142	142
Time (PST)	0726	1316	1521	1806	2021	2326	0346	9080	0802	0451	0206	2246	2036
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Long.(W) deg. min.	112 48.5												
Lat.(N) deg. min.	25 24.4 25 09.0												
Station	30.0	40.0	45.0	50.0	55.0	0.09	70.0	80.0	30.0	35.0	40.0	45.0	50.0
Line S	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	40.0	40.0	40.0	40.0	40.0

TABLE 2. Pooled occurrences of fish larvae taken during CalCOFI cruises in 1962.

Engraulis mordax	Rank	Taxon	Occurrences
2 Triphoturus mexicanus 422 3 Vinciguerria lucetia 371 4 Cyclothone spp. 277 5 Sebastes spp. 273 6 Protomyctophum crockeri 252 7 Merluccius productus 228 8 Leuroglossus stilbius 225 9 Disintegrated fish larva 223 10 Citharichthys spp. 221 11 Trachurus symmetricus 208 12 Lampanyctus ritteri 204 13 Stenobrachius leucopsarus 179 14 Bathylagus wesethi 168 15 Ceratoscopelus townsendi 157 16 Diogenichthys atlanticus 155 17 Myctophidae 151 18 Unidentified fish larva 147 19 Symbolophorus californiensis 140 20 Lampanyctus spp. 139 21 Diogenichthys laternatus 127 22 Tarletonbeania crenularis	1	Engraulis mordax	454
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4 Cyclothone spp. 277 5 Sebastes spp. 273 6 Protomyctophum crockeri 252 7 Merluccius productus 228 8 Leuroglossus stilbius 225 9 Disintegrated fish larva 223 10 Citharichthys spp. 221 11 Trachurus symmetricus 208 12 Lampanyctus ritteri 204 13 Stenobrachius leucopsarus 179 14 Bathylagus wesethi 168 15 Ceratoscopelus townsendi 157 16 Diogenichthys atlanticus 155 17 Myctophidae 151 18 Unidentified fish larva 147 19 Symbolophorus californiensis 140 20 Lampanyctus spp. 139 21 Diogenichthys laternatus 127 22 Tarletonbeania crenularis 115 23 Melamphaes spp. 106 24 Citharichthys stigmaeus 9			
5 Sebastes spp. 273 6 Protomyctophum crockeri 252 7 Merluccius productus 228 8 Leuroglossus stilbius 225 9 Disintegrated fish larva 223 10 Citharichthys spp. 221 11 Trachurus symmetricus 208 12 Lampanyctus ritteri 204 13 Stenobrachius leucopsarus 179 14 Bathylagus wesethi 168 15 Ceratoscopelus townsendi 157 16 Diogenichthys atlanticus 155 17 Myctophidae 151 18 Unidentified fish larva 147 19 Symbolophorus californiensis 140 20 Lampanyctus spp. 139 21 Diogenichthys laternatus 127 22 Tarletonbeania crenularis 115 23 Melamphaes spp. 106 24 Citharichthys stigmaeus 97 25 Lestidiops ringens <t< td=""><td></td><td></td><td></td></t<>			
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32 Hygophum reinhardtii 58 34 Diaphus spp. 56 35 Argentina sialis 49 36 Pleuronichthys verticalis 47 37 Lampadena urophaos 45 38 Idiacanthus antrostomus 43 39 Sciaenidae 42 39 Myctophum nitidulum 42	32	Sardinops sagax	58
Argentina sialis 49 36 Pleuronichthys verticalis 47 37 Lampadena urophaos 45 38 Idiacanthus antrostomus 43 39 Sciaenidae 42 39 Myctophum nitidulum 42	32		58
Argentina sialis 49 36 Pleuronichthys verticalis 47 37 Lampadena urophaos 45 38 Idiacanthus antrostomus 43 39 Sciaenidae 42 39 Myctophum nitidulum 42	34	Diaphus spp.	56
37Lampadena urophaos4538Idiacanthus antrostomus4339Sciaenidae4239Myctophum nitidulum42	35		49
37Lampadena urophaos4538Idiacanthus antrostomus4339Sciaenidae4239Myctophum nitidulum42	36	Pleuronichthys verticalis	
39 Sciaenidae 42 39 Myctophum nitidulum 42	37		45
39 Myctophum nitidulum 42		Idiacanthus antrostomus	43
		Sciaenidae	42
Al Cobiidas		Myctophum nitidulum	42
	41	Gobiidae	41
41 Notoscopelus resplendens 41		Notoscopelus resplendens	41
41 Symphurus spp. 41			41
44 Icichthys lockingtoni 39			39
45 Hygophum atratum 38			38
46 Paralichthys californicus 37			37
47 Scopelogadus bispinosus 34		Scopelogadus bispinosus	
48 Scomber japonicus 32	48	Scomber japonicus	32

TABLE 2. (cont.)

Rank	Taxon	Occurrences
48	Parophrys vetulus	32
50	Chilara taylori	31
50	Lyopsetta exilis	31
52	Chauliodus macouni	28
53	Trachipteridae	27
54	Ceratioidei	26
55	Gonichthys tenuiculus	$\frac{1}{2}$
56	Synodus spp.	23
56	Trichiuridae	23
58	Chiasmodontidae	22
58	Oxyjulis californica	22
60	Chromis punctipinnis	21
60	Cottidae	21
60	Clinidae	21
63	Peprilus simillimus	19
63	Microstoma microstoma	19
65	Poromitra spp.	18
66	Brama spp.	17
67	Ophidiiformes	16
68	Hippoglossina stomata	15
68	Nansenia crassa	15
68	Gempylidae	15
71	Hypsoblennius spp.	14
72	Notolychnus valdiviae	13
72	Nansenia candida	13
74	Seriola lalandi	12
74	Halichoeres spp.	12
74	Lampanyctus regalis	12
74	Notolepis risso	12
78	Medialuna californiensis	11
78	Scorpaena spp.	11
78	Ichthyococcus spp.	11
81	Ophidion scrippsae	10
81	Centrobranchus spp.	10
81	Bathophilus spp.	10
81	Semicossyphus pulcher	10
81	Scopelosaurus spp.	10
81	Aristostomias scintillans	10
87	Zaniolepis spp.	9 9
87	Prionotus spp.	9
87	Xystreurys liolepis	8
90	Anguilliformes	7
91	Howella brodiei	7
91 91	Coryphaena hippurus Vinciguerria poweriae	7
91	Etrumeus acuminatus	7
91	Bathylagus pacificus	7
96	Cololabis saira	6
96	Sphyraena argentea	6
	- x - J	

TABLE 2. (cont.)

Rank	Taxon	Occurrences
96	Serranidae	6
96	Stemonosudis macrura	6
96	Macroramphosus gracilis	6
96	Agonidae	6
96	Macrouridae	6
103	Syngnathus spp.	5
103	Gonostomatidae	5
103	Electrona rissoi	5
103	Diplophos taenia	5
107	Sudis atrox	4
107	Stomiiformes	4
107	Pleuronichthys decurrens	4
107	Tactostoma macropus	4
107	Loweina rara	4
112	Oxylebius pictus	3
112	Pleuronichthys spp.	3
112	Pleuronichthys ritteri	3
112	Evermannellidae	
112	Scorpaenichthys marmoratus	3
112	Photonectes spp.	3
112	Caulolatilus princeps	3
112	Paralepididae	3 3 3 3 3
112	Hygophum spp.	3
112	Sarda chiliensis	3 3
122	Labridae	2
122	Astronesthidae	2
122	Pleuronichthys coenosus	2
122	Cyclopteridae	2
122	Brosmophycis marginata	2
122	Sebastolobus spp.	2
122	Scopeloberyx robustus	2
122	Gerreidae	2
130	Haemulidae	1
130	Psettichthys melanostictus	l
130	Lepidopsetta bilineata	ī
130	Scorpaenidae	i
130	Hexagrammidae	î
130	Bathylagus spp.	ī
130	Girella nigricans	î
130	Icosteus aenigmaticus	1
130	Physiculus spp.	î
130	Carapidae	1
130	Eustomias spp.	1
130	Carangidae	ĺ
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TABLE 3. Pooled numbers of fish larvae taken during CalCOFI cruises in 1962. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	Engraulis mordax	212500
2	Vinciguerria lucetia	25960
3	Merluccius productus	19635
4	Triphoturus mexicanus	14783
5	Leuroglossus stilbius	13825
6	Sebastes spp.	11983
7	Trachurus symmetricus	5907
8	Citharichthys spp.	5391
9	Stenobrachius leucopsarus	4647
10	Cyclothone spp.	3322
11	Ceratoscopelus townsendi	2651
12	Diogenichthys laternatus	2262
13	Sardinops sagax	2247
14	Bathylagus wesethi	1990
15	Scomber japonicus	1462
16	Lampanyctus ritteri	1378
17	Disintegrated fish larva	1321
18	Diogenichthys atlanticus	1208
19	Protomyctophum crockeri	1194
20	Symbolophorus californiensis	1157
21	Lampanyctus spp.	1096
22	Tarletonbeania crenularis	1001
23	Unidentified fish larva	992
24	Myctophidae	843
25	Sciaenidae	698
26	Citharichthys stigmaeus	615
27	Symphurus spp.	552
28	Bathylagus ochotensis	455
29	Melamphaes spp.	452
30	Diaphus spp.	406
31	Stomias atriventer	395
32	Clinidae	358
33	Tetragonurus cuvieri	335
34	Hygophum reinhardtii	334
35	Diogenichthys spp.	324
36	Lestidiops ringens	306
37	Argentina sialis	295
38	Lampadena urophaos	292
39	Sternoptychidae	287
40	Chromis punctipinnis	265
41	Parophrys vetulus	262
42	Notoscopelus resplendens	258
43	Icichthys lockingtoni	244
44	Lyopsetta exilis	241
45	Scopelarchidae	233
46	Idiacanthus antrostomus	224
47	Synodus spp.	204

TABLE 3. (cont.)

Rank	Taxon	Count
47	Hygophum atratum	204
49	Pleuronichthys verticalis	202
50	Paralichthys californicus	188
51	Ophidiiformes	181
52	Myctophum nitidulum	162
53	Trichiuridae	160
54	Gobiidae	146
55	Seriola lalandi	145
56	Ophidion scrippsae	139
57	Gonichthys tenuiculus	138
58	Notolychnus valdiviae	106
59	Ceratioidei	102
59	Oxyjulis californica	102
61	Chauliodus macouni	101
61	Prionotus spp.	101
63	Chilara taylori	97
64	Scopelogadus bispinosus	95
65	Peprilus simillimus	88
66	Cottidae	84
67	Etrumeus acuminatus	80
68	Trachipteridae	79
68	Vinciguerria poweriae	79
70	Scorpaena spp.	78
71	Microstoma microstoma	77
72	Chiasmodontidae	72 - `
72	Sarda chiliensis	72
74	Hypsoblennius spp.	63
75	Lampanyctus regalis	58
76	Gempylidae	57
77	Nansenia candida	55
78	Brama spp.	54
79	Halichoeres spp.	52
79	Medialuna californiensis	52
81 81	Tactostoma macropus	51
83	Poromitra spp.	51
84	Sphyraena argentea Hippoglossina stomata	50
85	Nansenia crassa	48 46
86	Notolepis risso	42
87	Bathophilus spp.	38
88	Scopelosaurus spp.	36
88	Serranidae	36
90	Centrobranchus spp.	35
91	Semicossyphus pulcher	33
92	Aristostomias scintillans	30
93	Ichthyococcus spp.	29
94	Xystreurys liolepis	28
95	Anguilliformes	27
96	Gonostomatidae	26
		2. 0

TABLE 3. (cont.)

Rank	Taxon	Count
96	Coryphaena hippurus	26
98	Zaniolepis spp.	24
99	Howella brodiei	23
100	Electrona rissoi	22
101	Bathylagus pacificus	21
102	Stomiiformes	20
102	Cololabis saira	20
104	Macroramphosus gracilis	19
104	Stemonosudis macrura	19
106	Agonidae	17
106	Haemulidae	17
106	Macrouridae	17
109	Pleuronichthys decurrens	16
109	Syngnathus spp.	16
111	Diplophos taenia	13
112	Oxylebius pictus	11
112	Loweina rara	11
114	Psettichthys melanostictus	10
114	Photonectes spp.	10
114	Gerreidae	10
114	Sudis atrox	10
114	Scorpaenichthys marmoratus	10
119	Pleuronichthys spp.	9
120	Paralepididae	8
120	Hygophum spp.	8
120	Astronesthidae	8
120	Evermannellidae	8
124	Caulolatilus princeps	7
125	Brosmophycis marginata	6
125	Pleuronichthys coenosus	6
125	Pleuronichthys ritteri	6
125	Labridae	6
129	Scopeloberyx robustus	5
129	Sebastolobus spp.	5
129	Cyclopteridae	5
132	Girella nigricans	3
132	Icosteus aenigmaticus	3
132	Physiculus spp.	3
132	Carangidae	3
132	Bathylagus spp.	3
132	Lepidopsetta bilineata	3
132	Carapidae	3 3 3 3 3
132	Scorpaenidae	3
140	Hexagrammidae	2
140	Eustomias spp.	2
	Total	351342

TABLE 4. Numbers of fish larvae taken on stations occupied during CalCOFI cruises in 1962. Counts are adjusted for percent of sample sorted and standard haul factor (see text). Average number is given for stations occupied twice during a single month. Unoccupied stations are indicated by a dash.

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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DEC. NOV. OCT. JUNE 640.0 STATION

TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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	NOV.	0.00	NOV.	1111	1 1 1	1 1 1 1	0.00	NOV.	
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	1 🖼	120.0 50.0 120.0 55.0 123.0 42.0 123.0 50.0 127.0 55.0	STATION	0.0 60. 0.0 140. 0.0 100. 0.0 120.	3.0 65. 3.0 80. 7.0 45.	7.0 55. 7.0 60. 7.0 65.	100.0 40.0 100.0 45.0 103.0 35.0 103.0 45.0 107.0 35.0 117.0 55.0	STATION	60.0 55.0 60.0 80.0 60.0 90.0 63.0 52.0 70.0 120.0 70.0 200.0 83.0 65.0 87.0 45.0 93.0 70.0

TABLE 4. (cont.)

				Nans	Nansenia candida		(cont.)					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
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					Nansenia	ia crassa	sa	 	! ! ! ! !	: : : : : : :	 	! ! !
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
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20.0 60.	ı		ı		ì	ì	2.4	ı	ı	ł	0.0	ı
20.0 70.	i	•	ı	•	1	ı	0.0	ı	ŀ	i	0.0	ı
23.0 60.	i	•	i	٠	i	ı	0.0	ı	ı	0.0	ı	F
27.0 45.	I	•	i	•	ı	ı	0.0	ì	ı	0.0	ı	i
27.0 55.	ı	•	i	•	ı	ł	2.4	ì	ı	0.0	1 -	i
30.0 60.	1	٠	ı		ı	ı	0.0	ı	ì	1 0	0.0	ı
33.0 45.	1	٠	i		t	ı	ł	ı	ı	0.0	1 6	i
37.0 60.	i	٠	I	0.0	ì	ı	i	l	i	ł	, v	
40.0 45.	ì	•	ı	7.8	ı	ı	ı	I	ŀ	ŀ	0.0	ì
					Bathyl	Bathylagus spp	.d					! ! !
ļ Ħ	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
133.0 70.0		0.0	 	3.3		 	1	1	١	0.0	í	ì
				Bat	Bathylagus	s ochotensis	ensis					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
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3.0 55.		ł	52.0	ı	ı	1	ı	1	1	0.0	i	ł
3.0 60.		ı	8.6	ı	I	ı	ı	ı	ì		١	ı
7.0 55.		1	6.3	I	ì	ł	I	I	I	ı	I	l i
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0.0 60.		ı	0.0	1	1	ı	1	ı	i	ı	1	ı

TABLE 4. (cont.)

	AT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
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7.0 65.0	7.0 40.	ı	٠		٠	1	ı	•	ı	ı	•	ı	١
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3.0 28.0 - 0.0 - 5.2 - 0.0 0.0 - 0.0 0.0 - 0.0 0.0 0.0 0.0 0	0.0 60.	٠		ı	٠	ı	ı		0.0	ì	1 4	0.0	1
3.0 30.0 $ 0.0$ $ 5.8$ $ 0.0$ $ 0.0$ $ 0.0$ $ 0.0$ $ 0.0$	3.0 28.	ı	٠	ı	٠	1	ı	٠	1	ı	0.0	ı	ı
3.0 35.0 - 0.0 0.0 - 0.0	3.0 30.	t		1	٠	ı	ı	•	ł	ı	٠	i	ı
3.0 45.0 - 3.0 - 0.0 -	3.0 35.	i		i	٠	1	ì	•	ì	1	•	1	ı
$egin{array}{cccccccccccccccccccccccccccccccccccc$	3.0 45.	ı	٠	ì	•	1	i	•	ı	1		ı	1
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7.0 45.0 - 0.0 -	7.0 30.	ı	•	1	•	ı	ı		1	1		i	ı
3.0 35.0 - 2.7 - 0.0 0.0 0.0 0.0 0.0 -	7.0 45.	ł	•	1	٠	ı	ı	٠	1	1		ı	i
3.0 45.0 - 3.1 - 0.0 0.0 0.0 0.0 0.0 0.0 - 0.0	03.0 35.	1	•	1	٠	ı	1	•	ı	t		ı	1
7.0 35.0 - 2.6 - 0.0 - 6.8 - 0.0 - 0	03.0 45.	1	•	t	•	1	ı		ı	ı		1	1
7.0 40.0 - 0.0 - 8.8 0.0 - 0.0 - 7.0 50.0 0.0 0 - 0.0	07.0 35.	ı		1		1	1		ı	ı		ı	ì
7.0 50.0 - 0.0 - 2.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 - 0	07.0 40.	t		1		i	ı	٠	ı	ı	0.0	1	t
ATION JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 3.0 52.0 0.0 - 4.4 0.0 - 3.1 0.0 - 0.0	17.0 50.	ı	•	ı	•	ı	ı	•	ı	ı	0.0	ı	ì
ATION JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 3.0 52.0 0.0 - 4.4 0.0 - 3.1 0.0 - 0.0					4.0	7.00							
ATION JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 3.0 52.0 0.0 - 4.4 0.0 - 3.1 0.0 - 0.0					Bat	ngergn	· 1	Cus	 	 			1
3.0 52.0 0.0 - 4.4 0.0 - 3.1 0.0 - 0	ATI	JAN.		MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
3.0 55.0 0.0 - 3.1 0.0 -	3 0 52	l	: : : : :	V V	 	i i i i i i	 			 		١	١
	3.0 55.		ı	3.1	ı	ı	1	‡	ı	i	0.0	t	1

TABLE 4. (cont.)

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	NOV.	1111		NOV.	1 1	l i	ı	ı	ı	1 1		ı	ì	1 1	ı	1	ı	I I	ı	I	ı	l t	ı	ı						.0			
	OCT.	0.00		OCT.	2.2	0.0	ı	ì		•	2.0		•		•	٠	•	٠	0.0	٠	•	٠			•	ı	I	ł	1 1	١	ı	ı	1
	SEP.	1111		SEP.	1 1	1 1	1	ı	ı	1 1	l 1	i	i	1 1	ì	ı	i	ן ו	ì	ı	ı	1 1	1	ı	ı	1	I	ı	l I	ı	ı	ı	ì
·	AUG.	1111		AUG.	3.0	• 1	5.0	٠	1	1 1	24.1	8	•	48 8.0	•	ı	1 1)	I	ı	ı	1	ı	1	1	ı	i	I '	l 1	1	1	1	ì
(cont.	JULY	0.00	hi	JULY	1 (ł I	1	ł	0.0	7.7	0.1	I	I	1 1	0.0	0.0	٠	•	2.7	٠	2,	•		•			•	•	10. 10.	9.6	21.1	26.1	25.6
ificus	JUNE	1111	ıs wesethi	JUNE	1 1	l I	ı	ı	1	1 1	1	1	I	1 1	ı	ı	1	l !	1	ı	I	l I	1	ı	ı	ı	ı	I	i i	1	1	ı	ŀ
gus pac	MAY	1111	Bathylagus	MAY	l f	1 1	ı	1	ı	ıl	l 1	1	ł	1 1	ı	ı	1 1	1	1	ı	ı	1	1	ì	ı	ı	ı	1		ı	1	ı	ı
Bathylagus pacificus	APR.	0.00	Ва	APR.	1 1	1 1	ı	1	3.0	0.0	10.9	38.7	11.4	ى 1		•	•	•		æ	٠	٠				•	•	•	•			17.3	23.7
	MAR.	2.9		MAR.	•	g • 7	1	ı	i	1	:	1	1	1 1	ı	ı	1 1	! !	ı	ı	ı	l l	1	I	ı	1	ì	I :	ı I	1	ı	1	t
	FEB.			FEB.	1 1	i i	ì	ı		•		I	i	l ł		•	•	•	5.4	•	•	•					٠						
	JAN.	0.0 2.8 2.9		JAN.	0.0		ŧ	1	ı	ll		0.0		0	1	1	1 1	1	ì	ı	I I	1	l	ı	ı	ı	ı	i	1	ı	1	1	ı
	STATION	67.0 60.0 70.0 55.0 73.0 60.0 83.0 51.0		STATION	60.0 90.0 80.0 100.0	0.0 120.	0.0 140.	0.0 150.	3.0 80.	3.0	0.0	0.0 90.	0.0 100.	0.0 110.	3.0 45.	3.0 50.	3.0 60.	3.0 70.	3.0 90.	3.0 100.	7.0 45.	7.0	7.0 70.	7.0 80.	97.0 90.	00.0 35.	00.0 40.	00.0	00.0	0.0 60.	00.00	00.0 70.	00.0

TABLE 4. (cont.)

	DEC.	t	i	I	l	:	1	ł	I	I	ı	ŀ	ı	l	ı	ı	ı	ı	I	ı	ı	1	ı	i	1	I	I	ı	I	i	ı	1	l	I	ì	I	ı	ı	I	i	ı	1	ŀ	ı	I	ı	ı
 	NOV.	0.0	٠	٠	1	I	t	ı	1	i	I	I	ı	ı	1	ı	1	ł	!	0.0	•		•		0.0		•	٠	•	I	ı	ı	ı	I	l	ì	I	ı	1	I	1	ı	i	I	ı	ı	ı
 	OCT.	l	ì	1 0	0.0	٠	0.0	•	ή,	٠	· •	٠	٠	٠	٠	•	б		•	i	i	ı	ı	ı	i	ı	ı	ı	ı	0.0	٠	٠	0.0	٠	•	•	٠	•	•	•	•	•	•	•	٠	٠	•
 	SEP.	ı	i	1	ı	ì	1	ı	I	ì	ı	ì	ı	;	1	ı	ı	1	ì	ŀ	1	ı	1	ı	ı	ì	ı	ı	ı	ı	ı	I	ı	I	ı	ı	ı	1	I	ı	i	ı	ı	i	ı	ı	i
(AUG.		ı	ı	ı	ŀ	ı	i	ı	ı	ı	ı	ı	ı	ı	1	ì	ı	ļ	ι	1	ı	1	ı	ı	ı	ı	ì	ı	ì	i	ı	ı	I	I	1	ı	1	ı	I	i	I	ı	ı	ł	ı	ł
(cont.	JULY	52.8	ı	1 4	•	٠	٠		•	٠	٠	•	٠	•	•	٠	•	٠	٠			•		•	2.6	0		٠		•	•	٠	0.0		•	7	•		•	•	•	٠	٠	٠	٠	•	•
sethi	JUNE	i i i i i i i	ł	ı	ı	ı	ı	I	i	1	ì	ı	ı	ı	ı	ı	ł	ı	1	ı	ı	1	ı	1	I	ı	ı	1	i	i	ı	1	ı	ı	ı	1	I	ı	ı	١	l	ı	ı	ı	ı	١	ı
Bathylagus wesethi	MAY	i 	1	ı	ı	ı	1	ı	ı	ŀ	i	ı	i	ı	ı	1	1	1	1	1	ı	1	ļ.	ı	1	ı	i	ı	1	ı	I	ı	ı	ı	ı	ı	ı	ŀ	ı	ţ	ı	ı	ı	ł	ı	ı	1
Bathyl	APR.		36.7	0	•	٠ د	٠	٠	٠	٠	ı	9	14.2	4.	٠		٠	٠				ω,	9	•	0		•	٠	٠	٠	•	٠	0.6	٠	٠	٠	٠	٠	٠		٠	•	٠	0.0	٠		7.9
	MAR.		ı	1	ŀ	ı	į	ŀ	ŀ	ı	ı	ι	ı	1	ı	ı	ı	ı	ı	1	1	ı	1	1	ı	1	1	1	ı	ı	ı	ı	i	1	ı	ı	i	ł	ı	ı	ı	ŀ	ı	ı	ı	ı	ı
	FEB.		0.0	•	•	٠	٠																								•			٠	•		2	•	٠	•	•	•	•	٠	٠	٠	٠
	JAN.	 	ı	;	1	ı	ŀ	ı	ı	1	į	ı	ı	i	ı	ı	1	1	1	ı	1	ı	1	ı	4	ı	1	ı	1	ı	ì	ı	ı	ı	ı	i	ı	ı	ı	i	1	i	ı	ı	ı	ı	1
	 - -	- 0	100.0	20.	5.	0	٠ ا	Š	0	0	0	0	5.	0	Š	0	S	0	0	Š	0				0	0	0	0	0	0	5.	0	5.	·	٠ د	0	·	0	0	٠. د	ċ	ů,	·	٠. د	٠,	ċ	·
		0	0.00	0.00	03.	03.	03.	03.	03.	03.	03.	07.	07.	07.	07.	07.	07.	07.	07.	10.	10.	101	10.	10.	10:	10.	10.	10.	10.	13.	13.	13.	13.	5	13.	13.	13.	13.	17.	17.	17.	17.	17.	17.	17.	$\frac{17}{1}$.	17.

TABLE 4. (cont.)

		 	 	Bathy	Bathylagus wesethi	esethi	(cont.					
	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
20.0 40.	ı	•	ı	0.0	ı	1		ı	ł	0.0	ı	1
20.0 50.	1	•	ı	0.0	ı	ı	26.7	ı	ı	ı	•	ı
20.0 55.	ι	•	ı	5.1	ı	ł		ı	ı	I	•	ì
20.0 60.	ı	٠	ı	•	1	ı		i	1	ŀ	•	ı
20.0	i I	٠	l I	•	1 1	i I	x	i I	1 1	ı		i I
20.0 /0.)	•	1 1	•		1 1	N C	1 1	ll	1 1	•	
20.0	ı	•	ı	•	ı	i	٠	ı	ı	ı		
120 0 100 0	1	000	ı	0.7	I	i 1		1	I	I	•	1
23.0 42.	1	•	ı	•	ı	ı		1	1	0.0	•	ì
23.0 45.	ı		ı	• •	t	ı	32.2	١	١	0.0	ł	ı
23.0 50.	١		1		ı	ı	Š	ı	1	0.0	1	ı
23.0 60.	1		1		ı	ı	7.2	ı	1	0.0	1	ı
23.0 65.	ı		ı		ı	ı	•	ı	ı	0.0	ı	1
23.0 70.	1		ı	•	1	I	•	1	1	0.0	ı	1
23.0 80.	1		ı	•	1	1		1	1	0.0	ı	ı
27.0 34.	1		1	•	ı	1	•	1	ı	0.0	1	ı
27.0 45.	1		1	•	1	1	•	ı	1	0.0	ı	ı
27.0 50.	1		1	•	ı	ı	•	ı	1	0.0	ı	ı
27.0 55.	ı	•	ı	•	ı	ı	•	ı	ı	0.0	i	ı
27.0 60.	1	•	ı	•	ı	ţ	•	ı	ı	0.0	ì	ı
27.0 65.	ı		ı	•	ı	ı		ı	ı	0.0	ì	t
27.0 80.	1	•	ı	•	1	ı	•	ı	ı	0.0	ı	ı
30.0 35.	ı	٠	ı	•	ı	ı	•	ı	ı	ı	0.0	ı
30.0 = 60.	ı		1	•	ı	1		ı	1	ı	0.0	ı
37.0 45.	ı	•	ı	٠	ı	ł	ı	i	t	ı	0.0	ı
37.0 55.	ı		ı	0.0	ì	ì	I	ŀ	ı	1	2.9	ı
				ren	Leuroglossus		stilbius					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
60.0 52.		, ,	2.8							0.0		
0.0 55.	•	ı		1	ı	ı	I	1	1	•	ı	1
0.0 60.	0.0	ı	•	ı	ı	ì	I	ı	ı	•	i	ı
0.0 70.		1	•	ı	ŀ	1	t	ı	ı	•	ł	ŧ
3.0 52.	4.	I	٠,	1	ı	ı	ı	ı	ì	٠	I	I
3.0 55.	•	ı	4.0	i	I	ı	ı	1	ı	•	ì	ì
3.0 60.	•	1	. ע	1 1	1 1	l i	1 1	t I				1 1
7.0 55.	. 6				I I	1 1	l 1	ı	ı	•	i	ı
7.0 60.	. 9	ı		1	1	1	ı	1	i	ı	ı	1
70.0 53.0	13.0	ı	9	ı	ł	1	1	1	ı	0.0	ı	1
0.0 55.	8	ì		ì	ì	ı	ı	ı	ı	ı	ı	ı
0.0 60.		1	17.1	ı	ı	I	ì	ı	1	1 9	ı	1
0.0	•	ı	4.0	1	ı	1	ı	i	I	0.0	1	ı

TABLE 4. (cont.)

 	DEC.	1 1			· !	١		ł	1	i	ı	ı	ł	ı	ı	1	ı	1	ł	ı	ı	I	i	ı	ı	ı	I	I	ŀ	ı	ı	1 1	ł	ı	1	1	ı	ı	ŀ	ı	ı	ŀ	1	1	ı	i	
Leuroglossus stilbius (cont.)	NOV.	1	l	1	1 (1	1	ł	i	I	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	i	ı	ı	ı	1	ł	ł							0.0		1	ı	1	ŀ	ı	1	ı	
	OCT.		٠	٠		•	٠		٠	٠	٠	•	•	•	٠	•	٠	٠	٠	٠	٠	٠	0.0	٠	٠	٠	٠	٠	٠	٠	٠	•	1	ì	ı	ı	ı	ı	•		•	•	•		•	•	
	SEP.	1	I	ı	! !		ł	i	ı	ı	ı	ı	ı	ı	1	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	í	ı	ı	ı	ı	I	1	ll	ı	ı	ı	ı	1	I	ı	l	1	ı	1	l	ı	
	AUG.	ı	I	t	I (1	1	1 9	0.0		٠	0.0	٠	٠	ı	1	ı	ı	ı	ı	ŀ	ı	ı	ı	I	I	ı	ı	ı	ı	ı	1 0	0.0	1	7.4	•	ı	0.0) - -	0.0))) 	ı	ı	ı	1	ı	
	JULY	ı	ı	I	ı	I	1	ı	ı	i	ı	ı	ı		٠	٠	0		٠	٠	٠	•	0.0		٠	٠	٠	٠	•	•	٠	•	I I	ı	1	ı	ŀ	ļ	i	ı	1		•	7.7	•		
	JUNE	l	ì	I	ı	ı	ı	ı	ı	ı	ı	!	ı	ı	ı	ı	ı	ı	ı	1	1	1	ı	ı	ı	ı	ı	I	ı	ı	ı	ı	1	1	ı	ı	ı	1	1	ı	1	ì	ı	ì	ı	1	
	MAY	ı	ł	I	ŀ	ı	I	1	ı	i	ı	ì	ı	ı	ı	ı	1	ı	ı	ı	1	ı	1	ı	I	ı	ł	1	1	1	ı	I	ı	i 1	ı	1	ı	ı	ł	ı	ı	1	ı	ı	ı	1	
	APR.		ı	1	ı	ł	ı	ì	ı	1	i	ı	ı		217.4	;	7	05.	32.	57.	•	Ξ.	0	60.	7.	32.	23.	4	68.	58	0	٦.	18/.3	90	. 1	38		50.0	٠ ١ د	•	. 8	741	;	34		39.5	
	MAR.	202.5	02.	20.	75.9	.60	<u>.</u>	m,	٠	5		。	٠	٠	ı	ı	1	ı	l	ı	ı	i	ı	ı	1	ı	1	I	I	1	ı	ı	ı	1 1	l H	1	ı	1	١	ı	ı	١	I	ı	ı	t	
	FEB.	 	ı	I	i	i	ı	ı	ı	ι	ı	1	ı	ı	٠ ش	0	2	6		5			2.7	19.	5.		φ.	ъ Э	2		•	٠	I	i I		ı			ı	ı	y		` a	٠,	· ~	18.1	
	JAN.	109.0	٠,	٠	٠	4,	٠	;	•	٠	•	٠	٠	•	ı	1	1	ı	ı	I	1	i	1	ı	ı	ı	ı	ı	1	1	ı	1 4	96.6	٥,	•		• •	7.7	•	•	٠	ı !	ı	ı	ı	1	
	2	3.	0	;	٠	:	2	5.	。	5.	0	0	0	0	7	θ,	_	5	0	5.	0	0	0	5.	0	5.	0	5.	0	ۍ	0	· 0	α (,,	: د	کا د		· -		•	o	o c	کا د		• •	50.0	
	STATIO	73	ش	٠.	۲.		0	0	0	0	0	0	0	0	2	3	3	ξ,	<u>ر</u>	۳,		۳,	<u>ر</u>	7	7.	7.	7	7.	7.	7.	7.	7.	0								•	• • •	• •	· ·	· ·	93.0	

TABLE 4. (cont.)

	DEC.	ı	I	ı	ı	1 1	1	ı	1	ı	ı	ł	ı	1)	ı	I	1	ı	ı	ı	ı	i	ł 1	i	ı	ı	ı	ı	1 1		i	ı	ı	ì	ı	I	1 1	i	i	ı	ł
	NOV.	ı	ı	ı	ì) (- 1	ı	ì	1	ı	ı	1 9	•		•	•	•	ı	1	1	ı	ı	1 1	ı	1	1	1 .	0.0	1 0		•	ì	1	ì	I)))	ı	1	1	ı
	ocr.	•	٠	٠	٠	•				•	0.0	•	•	i	1	ı	ı			•	•	•	٠	•	•		•	•	ı	ı	l 1	•		•	٠	0.0	•			•	0.0	•
	SEP.		ı	ı	ł	1 1	1	ì	ì	1	i	i	ı	ì	1 1	ı	i	ì	ł	1	ı	ì	ì	j)	ı	1	ı	ı	1	I	1 1	ı	1	ı	ı	ı	ı	l 1	ı	ł	1	ı
•	AUG.	1	1	I	ı) (1	1	ı	1	1	ı	1	I	l	١	ı	ı	1	ı	4	ı	ŀ	1 1	1	ı	ı	i	ı	ı	l 1	i	ı	ı	1	ı	ì	1 1	ì	1	ı	i
(cont.)	JULY		٠	•	•	•	•	•			•		٠	٠	٠	•	•					•	٠	0.0	•			•	•		•	•		•	•	٠	•	•			0.0	•
stilbius	JUNE	ı	ı	I	ı	l I	ı i	1	ı	ı	ı	1	ı	I	1 1		ı	ì	1	ı	1	1	ı	1 1	ı	1	ı	ı	ı	I	1 1	- 1	i	i	1	1	ı	1 1	· 1	ı	ı	ı
	MAY	ŀ	ı	1	I	I 1	i i	ı	ı	1	I	1	ı	ı	1		. 1	ı	1	ı	ı	1	ı	ł I	· 1	ı	I	ı	ı	ı	i I	- 1	1	i	ı	ı		6.27	1	ı	i	ı
Leuroglossus	APR.	•	ο,	<u>.</u> ;	٠,	٠	· -		<u>ر</u>	8	9	4.	٠,		•	27 15	; -	i œ	;;		ж •	· 0	د	52.9	, .		5	•	•		•			50.	₹.	9.0	•	0	•		128.3	31.
į	MAR.	ì	i	1	I	I I	 	i	ı	ı	i	ţ	ı	ŀ	i 1	۱ ا	. 1	ì	ŀ	ı	ı	1	ı	1 1	i l	ı	ı	I	ı	ı	i I	 	ı	ī	ì	1	ı	1 (l I	1	1	ı
	FEB.		•	٠	٠	٠	34.0		<u>.</u>	4	3	•	•	L	•	•	•	•			•	•	٠	0.0	٠	• •		•		•	•	•		•	٠	•	•	•			5.9	•
	JAN.	1	1	ı	ı	I	l 1	ı	ı	ı	1	1		7.6	l I) [1	١	ı	1	1	ı	1 1	۱ ۱	ı	ı	ı	ı	ı	i I	l i	i	ı	1	ı	ì	1 1	l I	ı	ı	i
	Z	5	0	ģ	· •	:	٠,	, ru	0	2	0	5.	0	٠,		·	· -		, n	0	5	0	2.	٠ د	• •			5.	2	ش ر	٠ د			5.	0	2	ς.		· c		40.0	5
	STATION	۳.	'n.	m,	m (د			7	7	7	7.	97.	96	36		96	30	03.	03.	03.	03.	07.	07.		07.	07.	07.	10.	10.	10.		13.	13.	13.	13.	13	15.	17:	17.	117.0	17.

TABLE 4. (cont.)

			·	Leurogl	s snsso	Leuroglossus stilbius	(cont.	•				
TAT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
7.0 50.	 			1 4		ı	5.3	ł		0.0	1	1
18.0 39.	1	•	ı	106.5	1	1		ı	1	0.0	ı	ı
20.0 45.	1		1	9.8	ı	1		ı	1	1	•	ł
20.0 50.	1	•	ı	7.7	ı	í		1	ı	1		ı
20.0 55.	1	•	ı	•	1	i	•	i	ı	1	0.0	ı
20.0 60.	1	0	1	2.	1	ı	•	ı	ı	ı		i
20.0 65.	ł	•	ı	•	1	1	•	1	1	ı		1
20.0 70.	ı	•	1	•	ı	ı	•	1	1	i		ı
23.0 37.	1		ı	2.7	ı	ı	0.0	i	1	0.0	i	1
23.0 42.	ı	•	1	•	1	ı	٠	ı	ı	0.0	í	ı
23.0 45.	ı		ı	•	1	ì	•	t	ŀ	0.0	1	ı
23.0 50.	ı		ı	7.	1	1	•	ı	1	0.0	ı	ı
23.0 55.	ı		ı	•	ı	ı	•	i	1	0.0	ı	ı
23.0 60.	1		ı	0.0	1	1	•	ı	1	0.0	ı	1
27.0 40.	ı	•	ı	•	•	1	•	ı	ı	0.0	1	1
27.0 45.	ı	•	1	•	1	1	•	1	ı	0.0	1	ı
27.0 50.	ı		ı	٠	1	ı	•	1	1	0.0	1	1
27.0 55.	ı	•	ı	•	1	1		1	1	0.0	1	1
27.0 65.	1	2	ı	•	ı	1	•	1	1	0.0	ı	1
30.0 35.	1	•	ı		1	ı	٠	ı	1	i	0.0	ı
30.0 40.	ì	Ϊ.	1	٠	ſ	1	•	ı	í	ı	0.0	ı
30.0 50.	1		ı	0	ı	ı	•	ı	ı		0.0	ı
33.0 25.	ı		ı	٠	I	ı	ı	ı	ı		ı	ı
33.0 30.	ı	٠	ı	٠.	t	ı	i	ı	ļ	٠	ı	i
33.0 35.	ı	٠	ı	٠	ł	ļ	i	ı	ı	0.0	ı	ı
33.0 40.	ŧ	٠	i	•	ł	ì	ı	ı	ı		ı	l
33.0 45.	1		1	v.	I	ı	ı	ı	ı	0.0	1 6	t
37.0 23.	l		ŧ	•	t	I	ŀ	1	ı	ı		ı
37.0 30.	Į	•	ı	٠	ı	ı	I	I	ı	١		1
40.0 35.	1	•) (•	1 1	1 1	1 1	1	I I	1 1		1 1
40.	4	0.0	ı	13.2	1	t	1	ı	ı	1	0.0	ı
					Stomi	Stomiliormes						
A	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0.0 120.	•	ŧ	0.0		ı	1	1		I	3.6	1	1
0.0 100.	0.0	ı	ı	•	ı	ı	ı	0.0	ı	0.0	ŀ	ı
0.0		1 0	1 1	ລຸດ	1 1	1 1	1 0	•	1 1	0.0	i 1	i i
3.0	ı	•	l	•	I	ı	0.0	I	l	0.0	I	ı

TABLE 4. (cont.)

				 	Gonost	Gonostomatidae	1e	1				
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
70.0 200	0.0	1 1	2.8	1 1	1 1	1 1	1 1		1 1	0.0	1 }	1
200) I A	l 1	1		ı ı	 	 	2.6	1	0	1	
0.0 80.		0.0	ï	0.0	ł	ı	0.0) • • 1	i) • I	2.7	ı
					Cyclot	Cyclothone spp	å					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
60.0 120.	٠ ا	1	0.0	1	 	1				5.4	1	
0.0 140.	•	ı	0.0	ı	ı	1	1	ı	i	7.7	ı	i
0.0 160.	•	ı		1	1	1	ı	ı	ı	14.3	i	ı
60.0 180.0	œ٠	ı	11.7	ı	ı	ı	ŀ	í	ı	14.2	ŀ	1
0.0 200.	•	I	_	I	ŀ	ı	ı	ı	I	0.0	I	i
0.0 120.	•	1 1		1 1	1 1	1 1	1 1) I	l I	12.4	1 1	۱ ۱
0.0		ı	, 0	ı	ı	ŀ	į	9	ı	* C	ı	ł
0.0		ı		ı	ı	i	ı	0.0	ı	24.0	ı	ı
0.0 100.		ı) • • 1	ı	ı	1	ı	0.0	ı	2.8	1	1
0.0 120.		i	0.0	i	1	ı	ı	5.2	i	0.0	ı	1
0.0 130.	1	ı	ı	1	1	1	ı	2.5	ı	ı	ı	ı
0.0 150.	1	ţ	I	ı	1	ı	1	5.5	ı	ı	ı	i
0.0 160.	ł	i	ı	1	1	1	1	53.2	ı	ı	1	ı
$0.0\ 170.$	ŀ	I	I	ı	ı	ı	1	18.6	ı	ı	ı	ı
0.0	1 -	1	1 1	1 1	1 1	i 1	1 1	16.3	FI	ł I	1 1	1 1
0.0 190.	0 0 1	1 1	l I	α , ~	1 1	ł (l 1	13.0	ı	2 6	1	. 1
3.0.80.	•	•	ı		ı	ı	0.0	. 1	ı	0.0	1	ı
7.0 40.	1	0.0	ı	0.0	1	ſ	0.0	ł	1	2.1	ı	1
7.0 60.	ı	•	1	0.0	ı	1	0.0	1	1	0.0	ı	ı
0.0 50.		ı	ł	ł	ı	i	ı	2.7	ł	ı	ı	1
0.0 60.	0.0	1	ı	0.0	ı	ı	í	2.4	ı	1 (0.0	1
0.0 65.	0.	1	ı	0.0	1	ı	ı	1 6	I	2.8	ı	ı
0.0 80.	•	ı	I	0.0	t	1	ı	7.7	I	8.7	ŀ	I
0.0 90.	•	ı	ı	۰ ۲۰	ı	1	ı	7.2	l	0.0	I	í
0.0 100.		I	1	17.1	1	ı	I	200	I	19.9	ı	ı
0.0 110.	0	1 1	l i	ہ ا	1 1	1 1	1 1	102.3	! 1	0	l 1	1 1
0.0 120.	•	l I	l I	6.7	ı t	. 1	ı	101	ı	C . 1	ì	ı
0.0 130	0.0	l 1	: 1	10.4	1	1	1	19.7	ı	7.8	ı	ı
0.0 150.		ı	1	•	ı	1	ı	37.7	ı	•	ı	ı
0.0 160.	20.6	I	ı	2.9	1	1	ı	67.8	1	22.1	ı	ı
0.0 170.	ī	ł	ı	ı	1	1	ı	17.3	ı	1 9	i	ı
0.0 180.	25.7	ı	ı	13.4	ı	I	i	7.2	ı	2.6	1	ı
0.0 200.	2.3		I	41.4	ı	ı	1 0	0.0	ι .	24.4	i	ı
3.0 28.	I	0.0	l	0.0	I	I	0.0	I	ļ	7.7	l	ı

TABLE 4. (cont.)

	DEC.	ı	i	ı	i	1	1	ı	ı	ı	ı	ı	ļ	i 1	I	1	t	i	ł	i	1	ı	1	i	1	ı	ı	ı	i	ı	1 1	ı	ı	1	ı	1	ı	ı	ı	ŀ	i	t	; t	•	ı	
	NOV.	ı	i	ł	ı	1	1	ì	ı	ı	ŀ	ì	ı	ı	1 (•	٠	٠	٠	•	•	2.7	٠	•	٠	ı	ı	1	i	i	1 1	1	ı	1	1	i	ı	ı	i	1 0		•	2.5	٠	•	•
	OCT.	2.7	ب س ا	•	•		•	n	•	•		٠	•	٠,	•	ı	ı	ı	1	ı	ı	ı	i	ı	ì		٠	٠	٠	, ,	٠,	, u	10.6	Š		ä	•	-	5	•	1	ı	,	1 1	1	
	SEP.	ı	ı	ı	ł	ł	ı	ı	1	ı	ı	ı	i	I	ı	ı	ı	ł	ı	ı	ı	1	1	ı	ı	ı	ı	i	I	I	I	1	1	ı	1	1	1	١	ı	ı	ı	ı	i	I) 1	ı
	AUG.	ı	ı	ı	ı	ı	ı	ì	ı	ł	ı	ŀ	ŀ	I	ı	ı	i	ì	ı	ı	ı	ı	1	١	ŀ	ı	j	1	1	I	ŀ	1)	١	1	ł	1	ı	ı	ı	ı	ı	ı	ı)	•
cont.)	JULY	0.0	٠	•	•	•	·;	•	•	•	•	•	٠,	•	٠,	٠	Š	•	ς.	•	4	•	œ	1	ı		•	•	٠	•	•	٠	ر مورز			•	•		٠	٠	٠	•	•	٠	٠	•
Cyclothone spp. (cont.	JUNE	1	ı	1	ı	ı	i	ı	ŀ	ı	ı	ı	ì	ı	ı	1	1	ı	ı	i	,	1	1	1	1	ı	1	ı	i	I	ı	ı	1 1	ł	ı	1	ì	ı	1	1	ł	ı	ļ	ı	ì	ı
othone	MAY	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	I	1	1	ı	ı	ı	ì	ì	ı	1	ı	1	ì	1	1	ı	1	ı	i	ì	1 1	ı	ı	1	ı	1	ı	ı	ŧ	ì	ı	i	1	i
Cyc	APR.		•		•	•	•	•	•	•	•	m.	•	٠ م	•	•						•		•	•	7	٠	•	•	•	2.9	•	۲.5		; <		•	2.7	•	ı	•	•	200	٠	٠	•
1	MAR.	ı	1	ı	ı	ı	ı	1	ı	ı	ı	ı	ŀ	t	ı	ŀ	ı	ı	ı	ł	ı	ţ	ı	ı	ı	ı	ı	ł	ı	ı	ı	ı	ł I	١	1	ı	1	ı	ı	ì	i	ı	ì	ı	ı	ı
1	FEB.				•							•	•		•		•				•				5.3					•	•	•) c	•	٠				•		•	•	٠	٠	٠	•
	JAN.		1	ŀ	ı	1	ı	ł	ı	ł	ı	ł	1	I	ı	i	i	1	ì	ı	ı	ı	1	1	1	ı	ì	1	ı	ı	I	ì	1	۱ ا	١	1	1	ı	ı	ı	ı	ı	1	ì	ì	,
	STATION	93.0 50.	3.0 55.	3.0 60.	3.0 70.	3.0 80.	3.0 90.	3.0 100.	7.0 50.	7.0 55.	7.0 60.	7.0 65.	7.0 70.	7.0 80.	7.0 90.	00.0 40.	00.0 45.	00.00	00.00	00.00	00.00	00.00	00.00	00.0 100.	00.0 120.	00.00 160.	03.0 40.	03.0 45.	03.0 55.	03.0 60.	03.0 65.	03.0 70.	103.0 80.0	03.0 90.	07.0 45.	07.0	07.0 65.	07.0 70.	07.0 80.	07.0 90.	10.0 40.	10.0 45.	10.0 55.	10.0 60.	10.0 65.	10.0 70.

† 	DEC.		i
 	NOV.	888 888 800 900 900 900 900 900 900 900	•
	OCT.	10.11 10.11	I
i 1	SEP.		I
	AUG.		ı
ont.)	JULY	7.2.1.1.2.1.2.2.0.0.0.2.0.0.0.2.0.0.0.0.0	•
Cyclothone spp. (cont.	JUNE		I
othone	MAY		1
Cycl	APR.	201 201 200 200 200 200 200 200 200 200	7.7
	MAR.		ı
	FEB.		٠
	JAN.		ŀ
	STATION	110.0 11	30.0 45.

TABLE 4. (cont.)

) 	DEC.		DEC.	1 1 1 1	DEC.	
) 1 1 1 1 1	NOV.	22000 111111110000000000000000000000000	NOV.	2.6	NOV.	0.0000000000000000000000000000000000000
 1 1 1 1	OCT.	1111180000000000001111	OCT.	2 6.8	OCT.	2.7 0.0 0.0 0.0
1 1 1 1 1	SEP.		SEP.	1111	SEP.	1 1 3 1 1 1 1 1 1 1 1 1
 	AUG.	11111111111111111	AUG.	# • V	AUG.	
cont.)	JULY	10.3 20.4 15.5 5.1 	JULY	0.0 - - spp.	JULY	0.0000000000000000000000000000000000000
spp. (cont.	JUNE		JUNE		JUNE	
Cyclothone	MAY		MAY	$egin{array}{cccc} & & & & & & & & & & & & & & & & & $	 MAY	
Cycl	APR.	7	α 1	0.00	APR.	2
	MAR.		MAR.	1 1 1 1 1	MAR.	
	FEB.	14.00 13.00 13.00 13.00	FEB.	0000	FEB.	000000000000000000000000000000000000000
	JAN.		Z I)))))	JAN.	111111111
	AT	0000000mmmmmmmmmr///	TION	30.0 180.0 30.0 90.0 30.0 100.0 33.0 45.0	AT10	0.0 100.0 7.0 70.0 7.0 80.0 7.0 80.0 7.0 90.0 0.0 60.0 0.0 100.0 7.0 90.0
	ST		ST	1133	ST	100111111111111111111111111111111111111

DEC. 00.837.0 Vinciquerria lucetia STATION

TABLE 4. (cont.)

 	DEC.	ı	ı	1	ı	ı	ı	i	ı	ı	ı	ı	ı	i	ì	i	ı	i	l	ì	ł	ı	l	1 1	l	i 1	ı	ı	ı	ı	1	ı	ı	i i		ł	1	i	ı	ı	ı	ı	ı	1-1	
 	NOV.	8		4	٠,	د	د	ı	ı	ı	ſ	ı	ı	ı	ı	ı	I	ı	,	ı	ı	1	ı	1 1	1	1 1	ı	1	31.2	7	51.		۱ د	0.0	٠,	٠	90		•	ı	ı	1	ì	1 i	
1 1 1 1 1	OCT.	ı	ı	ı	ı	ı	ı	ı			٠	·;	٠	40.	• 7 /	441.	10	02.	4	₹.	:	د	· ·	32.	40.	0.108	707		. l	ı	ı	1	ł	1 1	ı	l I	1	ı	ı	7.		2.	6,	101.8	
) 	SEP.	ı	ı	1	1	ı	1	1	ı	í	ı	I	I	I	I	ı	l	ı	ı	ı	I	I	ı	1	I	1 1	ı	I	ı	I	1	ı	ı	ı	ı	ı) (1	ı	1	ı	ı	ı	1 1	
•	AUG.	ı	ŀ	ı	1	ı	I	ı	ı	ì	ı	1	ı	1	ı	ı	ı	ì	ı	ı	1	ı	ı	ı	ı	1 1	1	ı	1	ı	i	ı	ı	I	ı	ı			ı	ı	1	ı	1	1 1	
(cont.	JULY	•		· •	40.	ı	ı	ı		•	•	٠	7,	٠	•	2	51.	<u>.</u>	٠	٠	٠	٠	٠	•	٠	0.0	•	• •	0				•	٠	٠,	96	: 1	1 1	. 1		•	•	٠	0.0 4.6	
lucetia	JUNE	1	I	t	ı	1	I	ı	ı	1	I	1	i	ı	ı	1	1	ı	I	I	ı	ı	ı	I	I	1 1	l	ı	ı	ŧ	ı	1	ı	ı	ı	ı	ı	1	 	ı	1	ı	ı	1 1	
	MAY	ı	ı	ı	i	ı	ı	ı	I	ı	ı	ı	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ł	1 (I 1	ı	ı	t	ı	ı	ı	I	1	ı	ı	1 (ı !	1	ı	1	ı	1 1	
Vinciguerria	APR.		0.0	٠	٠	7	•	·	6	•	•	•	•	•	٠	•	٠					٠	•		•	0.0	•	٠			•	•		4.	•	7			•	-			•	6.0 5.7	
	MAR.	1	ı	ı	ı	ŀ	i	ı	1	ı	ı	I	ı	ı	ı	1	1	ı	1	1	ı	ı	ı	ı	ı	1	1	- 1	ı	I	ı	1	1	I	ı	ı	ł	!	۱ ۱	ı	ŀ	l	1	1 1	
	FEB.		5.6	•	9	٠	ф ж	ı			•	•	•	•			0							0	•	0.0	٠					9	4.	٠	٠ د	:		-	T				•	0.0	
	JAN.		1	ı	ı	I	ı	ı	ı	ì	l	ı	ı	ı	ı	ı	I	I	ì	1	1	ı	ı	t	1	I		- 1	ı	1	ı	1	ı	ı	ı	I	ı	I 1	: I	- 1	1	ı	1	1 1	
	STATION	0.00	00.00	00.00	00.00	00.0 100.	00.0 120.	00.0 140.	00.00 160.	03.0 35.	03.0 40.	03.0 50.	03.0 55.	03.0 60.	03.0 65.	03.0 70.	03.0 80.	03.0 90.	07.0 32.	07.0 35.	07.0 40.	07.0 45.	07.0 50.	07.0 55.	07.0 60.	07.0 65.	07.0	07.0	10.0	10.0 45.	10.0 50.	10.0 55.	10.0 60.	10.0 65.	10.0 70.	10.0 80.	10.0	10.0 100.	10.0 120.	13 0 35	13.0 40.	13.0 45.	13.0 50.	113.0 55.0 $113.0 60.0$	

TABLE 4. (cont.)

227.9 11.4 8.0 11.4 8.0 11.4 11.6 1	
605.4 227.9 11.0 17.0 17.0 18.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0 18.0 18.0 19.0 19.0 10.0 10.0 11.0	
22222888 1111.00 12222288.00 1111.00	
22222889 11.4 11.6 11	
22228888999999999999999999999999999999	•
2.25.5 2.26.6 2.26.6 2.27.6 2.26.7 2.28.7 2.28.9 2.28.9 2.28.9 2.28.9 2.28.9 2.28.9 2.28.9 2.28.9 2.29.0 2.21.0	
2.5 2.5 2.6 2.6 2.6 2.6 2.8 2.8 2.8 2.8 2.8 2.8 2.9 2.9 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	2:
42.2 42.2 70.0 2.6 82.8 82.8 83.6 85.6 85.6 86.6 87.3 8	2.
2.5 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.7 2.8 2.8 2.8 2.9 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	15.
26.4 26.7 26.1 26.1 26.1 26.1 26.1 26.1 26.1 26.1 27.1 28.2 28.2 29.2 20.0	7 6
2.6 8.2.6 8.3.8 8.6 8.6 8.6 8.6 8.6 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	0
88.8 83.8 88.6 8.6 8.6 8.6 8.6 8.6 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2
885.6 888.6 889.6 899.6 899.6 899.6 899.6 899.6 899.6 899.6 899.6 899.6 899.6 89	82.
88.56 72.99 88.88 88.88 99.55 1	95.
7.2.9 88.88 39.5 4.3 4.3 4.3 4.3 4.3 4.3 4.3 4.3	85.
39.5 4.3 4.3 4.3 4.3 4.3 4.3 4.3 4.3	.77
24.3 2.6.4 2.6.4 3.4.1 3.4	
26.4 4.3 26.4 34.1 3	39.
26.4 26.4 34.1 34.1 34.1 34.1 34.1 34.2 34.2 34.2 34.3 34.1 34.1 34.1 34.2 35.2 36.0	ı
26.4 26.4 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.2 35.0 36.0	
55.1 34.1 34.1 34.1 62.5 62.5 62.5 62.5 62.5 63.0	4.
255.1 34.1 74.1 62.5 4.6 0.0 0.0 0.0 1.0 2.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	0.0
34.1	55.
74.1	34.
62.5 84.2 0.0 0.0 0.0 11.0 12.5 14.8 16.3 17.9 17.9 16.4 17.9 17.	74.
84.2	57.
4.6	. 79
28.2 4.8 16.3 	40
28.2 - 0.0 - 11.0 - 11.0 - 11.0 - 11.0 - 1	
2.5 4.8 	
4.8	
28.2	4.
16.3 - 19.2 - 13.1 - 178.6 - 40.5 - 96.4 - 5.99.0 - 2.2	28.
88.6 - 40.5 - 0.00.0 - 6.4 - 5.00.0 - 2	16.
0.00	
6.4	
9.0	
.7	

TABLE 4. (cont.)

				Vinciguerria	ıerria	lucetia	(cont.	·				
A	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
30.0 50.			1	•	I	ı	7.		1	ı		
30.	ı	5.8	ì	0.0	ı	I	13.4	1	i	ı	5.5	ı
30.0 60.	ł		ì	•	ı	ı	<u>.</u>	ı	ı	i	•	ı
30.0 65.	I	1	ı	1	ı	ı	12.	ı	i	ı		i
30.0 70.	ı	20.	ı	3	ı	1		ı	ı	ı	•	ı
30.0 80.	ı	•	i	0	ŀ	1	53	i	ı	ı	٠	ı
30.0 90.	1		ı	?	ı	ı	9	ı	i	ı	•	ı
30.0 100.	ı	53.	ı	٠	ı	ı	i	ı	ı	ı		ı
30.0 120.	ŀ	5	١	;	ı	1	i	ı	1		•	ı
33.0 25.	1	0	ı	<u>.</u>	ı	ı	i	ì	ì	٠	ı	ı
33.0 35.	ł	•	ı	·	ı	ı	ı	ı	ı	٠	ι	ı
33.0 40.	1	0.0	ı		1	ı	1	ı	ı	48.5	ı	ı
33.0 45.	1	٠	i	ж •	1	1	ı	ı	ı	•	i	ı
33.0 50.	1	.	1	Š	1	ı	ı	ı	ì	;	ł	ı
33.0 55.	ı	•	ł	;	ı	1	ı	ı	ı	•	ı	i
33.0 60.	1	ф ф	i	6	i	1	ı	ı	ı	•	l	ı
33.0 65.	1	٠	ļ	•	ı	ı	ı	ı	١	2	ı	ı
33.0 70.	ı	5	ı	•	ı	ı	ı	ı	ı		ì	ı
33.0 80.	ı	•	ı	•	i	ł	ı	i	ı	•		ı
37.0 30.	ı	•	ı	•	1	ı	ı	ı	i		•	ı
37.0 35.	1	•	ł	2	ı	ı	ı	ı	ŀ	ł	•	ì
37.0 40.	1	ъ ж	ł	7	ı	ı	ı	ı	1	ļ	•	i
37.0 45.	1	9	ł	9	ł	ı	ı	ı	i	ı	5	ı
$\frac{37.0}{2}$.	ı	٠	ı	42.	1	ı	ı	ı	ı	ı	•	ı
37.0 55.	ı	54.	ı	?	1	ı	i	i	1	ı	4	ı
37.0 60.	ı	· .	ı	59.	i	ı	i	ı	ŀ	ı	2	ı
$\frac{37.0}{2}$	i	13.	i	· .	I	1	i	ı	1	ı	4	I
37.0 80.	ı	<u>.</u>	1	_;	t	ì	ì	ı	i	ı	۲,	i
40.0 30.	i	•	ı	·	ı	ı	ł	i	ı	ı	'n	ı
40.0 35.	I	· •	ı	4	i	ı	ı	1	ı	í	·	i
40.0 40.	1	•	ı		ı	1	i	ı	1	ı	27.5	ı
40.0 45.	ı	٠,	ı	. ف	I	ı	ı	ı	ı	ı	۰	ı
40.U 5U.	l	•	ł	5	ı	I	1	ı	ı	ı	•	i
				Vin	Vinciguerri	ø	poweriae					
	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	oct.	NOV.	DEC.
0 160	0.0		0.0		 	; ; ; ; ; ;	; 		 	5.7	 	1
0.0	1	1	1	ı 1	i I	I I	: 1	•		1	 	1
0.0 200.	0.0	I	ŀ	0.0	ı	ı	ı	15.7	ı	0.0	ı	ł
0.0 140.	•	1	ı	•	ì	ı	ı	•	ı	0.0	ı	i
0.0 150.	ic	ı	ı	1 0	ì	I	ı	•	ı	1 4	ı	ı
0.0 200.	•	ı	1	0.0	ì	ì	1	•	ì	n •	1	í

TABLE 4. (cont.)

	NOV. DEC.	00000 0000	NOV. DEC.	1 1		NOV. DEC.	
	OCT.	7.22000	OCT.	0.0		OCT.	0.0447000000000000000000000000000000000
	SEP.		SEP.	11		SEP.	
	AUG.		AUG.	1 1		AUG.	0.00
cont.)	JULY	e 000.000000000000000000000000000000000	JULY	4.8	uni	JULY	0.0000
Sternoptychidae (cont.	JUNE		JUNE	11	us macouni	JUNE	
noptyc	MAY	Astron	MAY	11	Chauliodu	MAY	
Ster	APR.	www.0000000000000000000000000000000000	APR.	0.0	C	APR.	000000
	MAR.		MAR.	1 1		MAR.	000000000000000000000000000000000000000
	FEB.	000000000000000000000000000000000000000	FEB.			FEB.	18.5 0.0 0.0
	JAN.		JAN.	1 1		JAN.	0 0000000000000000000000000000000000000
	STATION	123.0 46.0 127.0 45.0 130.0 45.0 130.0 50.0 130.0 60.0 133.0 70.0 133.0 80.0 133.0 55.0 133.0 70.0 133.0 70.0 133.0 40.0	TAT	117.0 90.0		AT	1000000mm000mr/rom

TABLE 4. (cont.)

				Chaul	Chauliodus macouni	acouni	(cont.)			 	 	
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
		1		ļ.				 	 			
3.0 65.	!	•	1 1	•	· 1	. 1		ł	ı	, c	l	ı
0.00	1 1	•	ı	•	I	ı		}	ì	. 1	2 8	i
00.00	ı 1		ì		ı	1	0.0	ı	ı	ı	0.0	i
0.00	ı		ı	•	ı	ı		ı	ı	ł	2.7	ı
03.0	ι	• •	1	•	ı	ı		1	ı	0.0	1	ı
03.0 65.)		1		1	ı		ı	ı	0.0	ı	ı
07.0 32.	ł	•	1		1	ı		1	i	0.0	ı	1
110.0 45.0	ţ	0.0	1	2.7	ı	1		ı	ı	ı	0.0	ŀ
				Idia	Idiacanthus	s antrostomus	tomns					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0 0 40	1	 					 		1	18.1	1	
0.0 160.		1	0.0	ı	ı	ı	ı	ı	ŀ	5.7	ı	ı
0.0 180.		ı		ı	ł	t	1	ı	ı	5.7	ı	i
0.0		ı		1	1	1	1	ı	ı	0.0	ı	١
0.0 200.	•	ı		ı	1	ı	1	1	ı	0.0	1	ı
0.0 90.	٠	ı		ı	1	I	ł	0.0	1		ı	i
0.0 120.	•	ı		ı	1	1	1	0.0	ı	7.3	ı	ı
0.0 140.			ı	ı	ı	1	1 4	2.5	ı	1 4	ı	ı
3.0 80.	ı		ı	0.0	ı	ı	0.0	I	ı	2.7	ı	ı
3.0 90.		•	l		I	ı	0.0		ı	3.0	u 1 u	ı
0.0	•	1 1	1 1		1 1	1 1	1 1	•	1 1	2 8	n 1	l i
	•		ı		ı	1	ı	•	ı	2.7	ı	ı
0.0 100.	00	1	ı	0	1	ı	ţ	2.6	ı	0.0	ı	i
0.0 110.	•	ı	ı		ı	ı	ı		ı	ı	ı	ı
0.0 120.		1	ł	0.0	ı	ı	ı		ı	8.7	ı	ı
0.0 140.			ı	0.0	1	ı			ı	$\frac{5.6}{1}$	ı	١
3.0 55.	ł		ı	0.0	ŀ	ı		ı	ı	7.9	ı	ı
3.0 70.	I	٠	ı	0.0	ı	i		1	ı	0.0	ł	ı
3.0 80.	ŀ	٠	I	0.0	ı	I		ı	ı	0.0	l	ı
3.0 90.	1	٠	ı	0.0	ı	ı		ı	ı	10.2	ł	ı
3.0 100.	1	٠	1	0.0	ı	1		I	t	11.5	ı	ı
97.0 80.	ı		ı	0.0	ı	I		ı	ı	0.0		ı
00.0 45.	ı	•	1	0.0	1	1		ı	ı	ı	•	ŀ
00.00	ı		ı	0.0	ı	I		ı	1	ı	•	ı
00.0 70.	1	•	i	0.0	ı	1		ı	ı	ı	•	ı
00.0 80.	ı	•	ı	0.0	ļ	l	0.0	!	1 (H	7.17	l)
00.0	į ·	•	ı		1 1	1 1			 	ı		i
00.0 100.	i I			•) I	 	0 0	ı	ı	5.3	•	1
103.0 70.0	١	0.0	ı	0.0	ŀ	ı	0.0	1	1	2.7	ı	ı
03.0 80.	1		ı	0.0	ı	ı	0.0	i	ı	5.5	1	ı

TABLE 4. (cont.)

Idiacanthus antrostomus (cont.)

STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP	ocT.	NOV.	DEC.
103.0 107.0 120.0 120.0 120.0 123.0 130.0 130.0	i 	00000		- 0.0 0.0 0.0 0.0		i	- 0.0 - 0.0 - 2.5 - 2.6 - 0.0 scintillans] 	11111	2.7	0.0	
	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0 180	0.00	!	2.8	0.0	1 1 1 1	1 1 1	1116	2.7	1 1 1 1	8000	111	1111
00.0 100. 00.0 120. 03.0 120.	111		1 1 1 1	0000	1111	1111	2.00		111	8 6	0.0	
0.0 65. 0.0 70. 0.0 120.	1 1 1		1 1 1	0.00	1 1 1	1 1 1	000	1 1 1	1 1 1		0.00	1 1 1
STATION	JAN.	 FEB.		APR.	Bathophilus MAY JUNE	hilus spp	op.	AUG.	SEP.	OCT.	NON.	DEC.
60.0 180.0 80.0 90.0 80.0 120.0 90.0 70.0 97.0 45.0 100.0 60.0 113.0 40.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	8.8 0.0 5.7 	0.0 0.0 0.0 0.0 0.0	Eustor	Eustomias spp	• ;	3.0 0.0 2.7 5.0 	SEP.	0.0000000000000000000000000000000000000	0.0 0.0	DEC.
90.0 200.0	0.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0.0			! ! ! ! ! !	2.4	 	0.0	 	

TABLE 4. (cont.)

	DEC.	111	DEC.	1 1 1 1	DEC.	
	NOV.	1 1 1	NOV.		NOV.	00000 00000
	OCT.	0.0	OCT.	7.7 2.8	OCT.	0.0000000000000000000000000000000000000
	SEP.	1 1 1	SEP.	1 1 1 1	SEP.	}
	AUG.	2.5	AUG.	17.9	AUG.	06 000
ъ.	JULY	111	JULY	ter	JULY	0 0000000000000000000000000000000000000
Photonectes spp	JUNE	1 1 1 1	MAY JUNE JU	atriventer	JUNE	
Photone	MAY	1 1 1	MAY	Stomias	MAY	
	APR.	0.0	APR.		APR.	0.000000000000000000000000000000000000
	MAR.	5.5	MAR.	0.0	MAR.	
	FEB.	1 1 1	FEB.		FEB.	3.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5
	JAN.	0.0	JAN.	0.0	JAN.	
	STATION	90.	STATION	60.0 140.0 70.0 70.0 80.0 130.0	TAT	80.0 80.0 80.0 87.0 90.0 90.0 90.0 93.0 93.0 97.0 97.0 97.0 100.0

TABLE 4. (cont.)

				Stomic	Stomias atriventer	renter	(cont.)					
TAT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
13.0 65.			1	0.0	ı	ı	0.0	i	1	•	ı	ı
13.0 80.	1	16.3	ı	0.0	ı	1	0.0	ı	1	0.0	ł	t
13.0 90.	١		ı	•		ı	0.0	ı	ı	0.0	1 0	ì
15.0 35.	ı	٠	1	1 4	2.5	1	0.0	ı	ì		0.0	1 1
17.0 55.	ı	٠	ı	0.0	ı	ı	•	ì	ı		1	l f
17.0 60.	ı	٠	l	0.0	ł	ı	•	I	!	•	1 1	1 1
17.0 65.	I	٠	ı	2.4	ı	I	٠	ı	l	٠	1	
17.0 90.	ı	٠	ı	٠	ı	ı	٠	ı	l	٠	1 0	l
20.0 55.	ı	٠	ı	•	ı	ı	٠	ı	i		•)
20.0 60.	1	•	ı	•	ı	ı	0.0	ì	I	i I) [
20.0 65.	ı	•	ı	٠	ı	ì	•	ì	I 1	I 1	•	!
20.0 70.	ı	٠	ì	•	ı	ì	•	1 :	I 1	1 1		!
20.0 80.	ı	•	1	٠	ı	i I	•	1 1			•	ł ł
20.0 90.	ı	٠	ì	•	ı	ı	•	١	ı 1		•	ı
20.0 100.	ı	•	ı	•	ı	ı		1 !)	c 1 c	٠	l 1
23.0 37.	ı	· •	ı	•	I	ı	•	I	l		i 1	. 1
23.0 70.	١	•	ı	٠	ı	ì	•	ı)	•	i 1	
27.0 65.	ı	۶,	1	٠	i	I	•	I	ı	0.0	i 1	i 1
27.0 80.	ì	•	ı	٠	ı	ı	٠	ı	ı	•	c 1 C	
30.0	ì	•	1	٠	ı	ı	٠	ı	ı	1		1
30.0 35.	ı	0	ı	•	ı	ı	•	ì	۱ ۱	l	•	1 1
30.0 50.	ı	٠	ı	٠	ı	1	•	ı	I) !	•	. !
30.0 55.	I	٠	ı	•	1	1 1		I I	۱ ۱	1 }		ı
30.0 60.	ł	٠	ı	•	I	l	•		I	ı	•	ı
30.0 65.	l		ì		1	I	•	I 1	i 1			ı
30.0 70.	ı	٠	ŧ	٠	ı	I	٠	! !)			ı
30.0 100.	ı	٠	ł	٠	ı	i	1	1 !		c		ı
33.0 45.	ı	٠	I	٠	I	ı	1	ı		•	ŀ	ı
33.0 50.	ı	٠	ı	٠	I	i	ł	I	1	•	. 1	ì
33.0 55.	ı	•	i	•	I	I 1	1 1	ı (ı ı	•	ı	ì
33.0 60.	1	•	ı	٠	ı	ı	ı	ł I	l I	٠	١	ı
33.0 65.	I	٠	I	•	ŧ !	1 1	ı ł	l I	ı I		ł	ı
33.0 /0.	I	•	1 1	•	. 1	۱	ı	ı	ı	•	0.0	ı
27.0 33.	1 1	•		•	ı	1	i	ì	ı	1	0.0	ı
37.0 50	ı		1	8	ı	ı	1	١	ì	ı	0.0	ı
37 0 60	1		ì		ı	ı	i	ı	ŀ	ı	0.0	i
137.0 70.0	ı	2.9	1	•	1	ı	ı	1	ı	I		ı
					FVerma	Evermannellidae	ae					
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1				1	1				
	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	ocr.	NOV.	DEC.
70.0 200.	•		2.8	1	1	ı	ı	1 (ı	0.0	i	1
80.0 200.0	0.0	1 1	1 1	0,0	i i	1 1	! !	5.6 0.0	l 1	0.0	ł į	1 1
.002 0.0	•			,))		ı		

TABLE 4. (cont.)

Lestidiops ringens Lestid	JAN.
Lestidiops ringens	0.0 - 2.
Lestidiops ringens WAAY JUNE JULY AUG. SEP. OCT. NOV. WAAY JUNE JULY AUG. SEP. OCT. NOV. 2.7 2.6 0.0 0.0 1.2 0.0 0.0	.1 -
MAY JUNE JULY AUG. SEP. OCT. NOV.	
7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.	FEB. MAR. AP
0.00	ì
100	
2.6	2.9
12.00	.0
2.6 2.6 2.7 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	i
0.00	1
100	1 1
0.00	
0.00	ı
000	- 0.0
000	0.0
3.00 9.00 1.00	
00	
99 5.59 6.00 0.0	0 -
7	1 1
0.0	; ! ; !
00	2
00	- 0.
7	0,0
7	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	- 0.
0	- 6.
0	- 0.
0	- 0.
9 4.8 0.0 0 4.7 0.0 0 12.0 2.8 0 0.0 2.8 0 0.0 0.0	1
0	11
00 2.8 00 2.8 00 2.5 00 0.0 0.0	- 0.
$egin{array}{cccccccccccccccccccccccccccccccccccc$	1 0.
	0 - 0.
	10.

TABLE 4. (cont.)

	DEC.		DEC.	ı
	NOV.	0.00022550	NOW	1
	OCT.	000000000000000000000000000000000000000	OCT - 2.9	2.8
	SEP.		SEP.	1
_	AUG.		AUG. AUG. AUG. AUG.	0.0
(cont.	JULY	000000000000000000000000000000000000000	JULY	1
ringens	JUNE	is risso	JUNE JUI	ı
	MAY		. MAY JU 7 7 8 8 6 6 6 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1
Lestidiops	APR.	00000000000000000000000000000000000000	APR. 2.7 3.0 2.8 0.0 2.6 8.6 5.5 0.0 0.0	0.0
	MAR.		MAR. 2.9 0.0 0.0	ı
	FEB.	000000000000000000000000000000000000000	FEB.	ı
	JAN.		JAN.	0.0
	NO	0.00 0.00	888800 9900 550	
	STATIO	103.0 103.0 1003.0 1003.0 1007.0 1110.0 1110.0 1113.0 113.0 113.0 113.0	11411 100000000000000000000000000000000	90.0

TABLE 4. (cont.)

				Stemono	sipns	Stemonosudis macrura	(cont.)	·				
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCI.	NOV.	DEC.
107.0 80.0 130.0 90.0 133.0 80.0 137.0 80.0	1111	0.0 0.0 5.8 2.6	1111	0.00	1111	111	0.0	1111	1111	2.8	0.0	1111
					Sudis							
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
90.0 180.0 90.0 200.0 110.0 160.0	0.0	1 1 1		2.7	1 1 1		1 1 1	2.4	1 1 1	0.0	1 1 1	111
				S	copelos	saurus s	spp.					
STATION	JAN.	FEB.	MAR.	APR.	MAY	. MAY JUNE	JOLY	AUG.	SEP.	OCT.	NOV.	DEC.
0.0 80.	0.0			2.7				0.0		0.0	i i i i i i	! ! ! !
3.0 90.	1 1	•	1 1	2.8	1 1	, ,	0.0	1 1	1 1	0.0	1 1	1 1
00.00	ı	0.0	ŀ	0.0	ı	ı	2.4	ı	ı) 	0.0	1
00.0 65.	1 1	•	l i	2.0	1 1	1 1	0.0	1 1	1 1	1 1	000	1 1
00.0	i		i	20.0	ı	i	0.0	ı	1	ı	0.0	1
100.0 160.0	1 1	0.0	1 1	2.7	1 1	1)	0.0	1 1	i i	0.0	L 1 ·	1 1
10.0 70.	1	•	ı	2.7	ı	ı	0.0	ı	ì	ı	0.0	ı
					Scopel	larchida	ıe					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE J	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0.0 140.			0.0	1 1 1 1 1 1 1	į				ı	2.6	ı	1
0.0 160.	•	ł	0.0	ı	I	1	I	ı	I	2.0	1	t i
0.0 180. 0.0 200.	n c	1 1	0.0	1 1	i I	li	1 (1 1	li	0.0	1	1 1
0.0 140.	•	ı) 	1	ı	ı	ı	2.5	1	1	ı	1
0.0 150.	ŀ	1	ı	ı	1	I	1	ი ი	ı	ı	1	1
0.0 160.		i 1	ŀΙ		ł I	1 1	1 1	4.0	l i	0.0		l ł
0.0 90.	0.0	1	ı	3.0	ı	i	ı	0.0	i	0.0	i	ı
0.0 110.		1 1	1 1	1 0	1 1	1 1	1 1	 	Li	2.9	1 1	1 1
0.0120.	•	ı	1)))	ı	1	1	2.5	1) i	ı	ı
$\begin{array}{ccc} 0 & 140 \\ 0 & 160 \end{array}$	3.0	1 1	1 1	0.0	1 1	1 1	1 1	2.5	1 1	2.6 0.0	i i	1 1

TABLE 4. (cont.)

Scopelarchidae (cont.)

0.00	1	i i	JAN. FEB.	MAR.	APR.	MAY	JUNE	JULY	וטו	SEP.		NOV.	DEC.
0.00 0.00	2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.9		1 1		i l	1 1	1 1	0.0	1 1		1 1	1 1
2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0		1	•	I	i	0.0	1 1	1 1	•	1 1	i i
2.4	2.4	. 7.		1 1	•	1	1 1		: I	I	•	0.0	i
2.4	2.4			ı I		ı	1	2.6	ı	1	ı	•	ı
10.00	0.00	0		1		1	i	2.4	I	ı	ŀ	•	i
10.00 10	100.00 10	5.		ì	٠	1	i		ŀ	ı	1 0	•	i I
13.8 10.0	13.8	0		ı	٠	I	i	•	I	j		1 1	1 1
1000 1000	10.00 10	0.		1	•	i	ı	•	l	1 1	•	i	ı
	100	0.0	•		•	i	1 :	•	i I	lı	•	i i	ı
2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0	'		٠	i !	1 1	•	i i	I	•	ı	ı
2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0	1		•	ı	1	٠	i I	ı	•	i	ı
2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	O.0	1		٠	ı	t I	٠	۱ ۱	i 1	•	0	ı
2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0	ı		•	ı	i	٠	li	i	i		ı
2.9	2.9	0.0	l I		٠	1 !	l I	٠	: 1	I	i	0.0	1
2.9 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.9 .9 .9 .9 .9 .9 .9 .9 .9 .9				•	ļ I	ı I	•	ı	ı	ı	8.7	ı
2.7 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	2.7 .3 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	•			•	ı	ı	•	1	1	8.5	1	ı
2.7 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	2.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	•	1 1		•	i	ı	• •	1	ı		ı	1
2.7	2.7		1		•	ı	1		ı	1	٠	ı	1
2.7	2.7		I			ı	i	•	ı	1	٠	ı	I
2.7 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	2.7 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	0.0	1		•	l	ı	•	ı	1	ı	•	!
2.4 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	2.4	0.0	ı		•	ı	ì	•	ı	ı	ı	•	1
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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JULY	333.6 115.2 12.7 12.7 12.7 12.7 12.7 10.0 10.0 10.0 10.0
JUNE	
MAY	
APR.	111111111111100000000000000000000000000
MAR.	000000
FEB.	000000000 00000000000000000000000000000
JAN.	
NO	
AT	

TABLE 4. (cont.)

TABLE 4. (cont.)

				Lampac	Lampadena urophaos	ophaos	(cont.		 			
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
30.0 35	 	١ ،	i i i i	0.0	1	1		1	1	1	0.0	1
30.0 70.	1	•	1	2.5	1	1	0.0	I	ı	ı	0.0	ı
130.0 80.0	1	0.0	1	0.0	ı	i	10.4	ı	ı	1		ŀ
30.0 90.	1	•	1	5.6	1	ı	5.6	ı	í	1	0.0	ı
33.0 70.	1	٠	I		1	ı	ł	ŧ	ı	5.3	l e	i
37.0 60.	ł	•	I		ł	ı	1	i	ı	ı	0.0	ı
					Lampanyctus	yctus spp	.ф.					
AT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	ocr.	NOV.	DEC.
90.	ı	 	9.2	 		1	1	1	1	0.0	ı	i
0.0 120.	٠	ŧ	2.7	ı	ı	ı	ı	ı	ı	0.0	ı	ı
0.0 160.	٠	ŧ	•	ı	ı	ı	ı	1	ł		ı	ı
0.0 180.	0.0	ı		i	1	ı	ŀ	1	ł	5.7	i	ı
0.0 200.	•	ı	•	ı	ł	ı	ı	ı	I	•	ı	ı
3.0 52.	٠	1	•	i	ı	ı	ı	ι	ι	0.0	ı	ı
3.0 60.	٠	1	•	ı	I	I	l	ı	ł	٠	ŀ	ı
0.0 100.	٠	1	o .	F	1	ı	ı	ļ	ı	ı	I	i
0.0 120.	٠	ı		ŀ	I	ı	1	į	l	1 4	ŀ	ł
0.0 200.	٠	ı	11.4	ı	I	i	ı	1 6	ı	4.0		ı
0.0 100.	٠	I 1	_	i	l I	1	ł (٠	1		i i	1 1
0.0 120.	0 1	1 1	0.7	i I	1 1	ll	1 1		1 1		 	i I
0.0	ı	1	ı	i	ł	ł	ı		ı	ı	ı	1
0.0 160.	1	ı	ı	1	ı	ı	ı		ł	ì	i	1
0.0 170.	1	l	ļ	1	ı	ı	1	•	1	ı	1	ı
0.0 180.	1	ι	I	ı	ı	l	ı	•	ı	ı	ı	١
0.0 190.		ı	4		1	ı	ı	•	1	ı	i	1
0.0 200.	8.5		ı		ı	1		•	ı	5.3	I	١
3.0 55.	ı	•	ı		1	ł		ı	1	0.0	1	ı
3.0 0.8	ı	0.0	ı	0.0	ı	ı	0.0	ŀ	ı	0°0	ı	t
7.0 45.		•	1		1	ı	•	1	ł	0.0	ı	ı
0.0 80.	0.0	I	1		ſ	I	1	0.0	I	0.0	I	ı
0.0 110.		ı	ı		I	i	ı	•	ı	1 0	ı	ı
0.0 120.	0.0	1	I	0.0	I	1	ı	9.5	1	7.9	ı	i
0.0 130.		I	ı	(L	l	I	I	•	ı		i	I
0.0 140.	7.9	I	I	2.2	I	1	ı		I	2.5	I	1 :
0.0 150.		ı	ı		ı	ı	i	15.1	ı	1 0	ı	j
0.0 160.	3.0	ŀ	ı	23.4	ì	1	1	3/./	ı	0.0	i	1
0.0 1/0.		ı	I	1 5	I	ı	ı	4.6	ì	1 0	1	1
0.0 180.		ı	1	77.4	ı	ı	ı	7.0	ı).).) (
3.0 200			1 1	4.1.4 0.0	i i	i l	0 1)))	1 1	· · · · · ·	 	1
	ı	00.	i 1	0.0	ı ı	ı	0.0	i	- 1	5.0	ı	1
7.0 70.	ł	•	ł	3.2	ì	t	0.0	ı	ı	0.0	1	ı

TABLE 4. (cont.)

	DEC.	1	l 1	ì	1	1	í	1	ı	١	ı	l I	l I	ı	ı	ı	1	1	ı	ı	ł	1	ı	1	!	• 1	ı !	ı	1	ı	ı	ì	1	ı	ı	1 (1	ı	ı	١	ı	1 1
	NOV.	1		0.0	•	ı	1	ı	ì	ì		0.0	٠	1	ı	1	1	ı	ı	ı	ı	ı	ı	í	1	1 1	c 1 c	•	•	• •	•	0.0	•	ı	í	1 1					•	0.0
	OCT.	0.0	•	ı	1	ı	•	•	•	2.8	•	í	l 1	0	•	•					•	•	•	٠	٠	7.7	•	· •	ı	1	1	ı			٠	٠	0.1	ı	ı	1	ı	ΙΙ
	SEP.	1	1 1	ı	1	1	1	I	i	ŧ	1	1	I 1	1	ı	ı	ı	ı	ı	ı	ı	1	1	i	I	ı	1 1		1	ı	ı	ı	ı	I	1	1 :	1 1	1	ı	t	I	1 1
	AUG.	1	1 1	ı	1	1	i	ı	1	ı	ı	I	l I		ı	1	ı	ı	ı	i	ı	ı	ı	ı	ı	l I	1 (ı ı	ı	ı	ı	ı	ı	ı	t	I	1 1	ı	1	i	ı	1 1
cont.)	JULY	0.0	•	•	ı	ı	•	•	•	0.0	•	•	1 1		•	•	• •				•		٠	٠	٠	0.0	•	•	•	• •		1		•	•	•	•	•	5.5	2.		∞ \bigcirc
spp. (cont.)	JUNE)	I 1	ı	ı	ı	ı	ı	ı	ı	1	t	! !	!	· I	ı	1	ı	ı	1	1	ı	ı	ı	ı	1	1		ı	ı	ŧ	ı	ı	ı	1	i	۱ ۱	ı	1	1	1	1 1
Lampanyctus	MAY	1	I (ı	1	ı	1	1	i	ı	1	ı	1 1		ı I	1	ı	ı	1	1	1	1	ı	1	ı	ı	l	l i	ı	t	i	1	ı	i	I	ŧ	1 1	i	ı	1	ı	1 1
Lamp	APR.		•	•		•	0	•		•	•	•			•		• •	; <u>-</u>		7	ω.	2	•	٠	•	•	•	•	•	•		•	•	•	٠	٠		•			•	0.0
	MAR.	 	l i	· 1	1	ı	ı	ı	i	I	ı	ı	1 1	l	· 1	ı	ı	ı	1	1	ı	1	ł	ı	ı	I	ı	I 1	· I	ı	t	i	I	ı	I	ı	1 1		ı	ı	ı	1 1
	FEB.	0.0	٠	•	•	ı	•	•	•	0.0	٠	٠	•		•	•	•	•			•		•	•	· •	٠	•	٠	•	•		•	•	•	•	•	•	•	0.0		•	9.8 20.8
	JAN.		I	l I	ı	ı	1	ı	ı	ı	i	!	1 1	I	ll	ı	ı	ı	1	ı	ı	ı	i	ı	ı	ı	ı	ı	1 1	1	ı	1	1	t	ı	ı	1 1	ı ı	ı	ı	1	1 1
	NO	0.		000	40.0		65.	0	0	0	0	80.		9	D 14		· -	٠			0	0	5.	0	Š.	0			· c		0	0	20.	٠.	0	· •				5	0	80.0 90.0
	STATIO	97.	97.			00.	03.	03.	03.	07.	07.	$\frac{10}{10}$	10.	ה	5	, , , ,		; ; ;	3	13.	13.	17.	17.	17.	17.	17.	1,	200	200	200	$\frac{1}{20}$.	20.	20.	23.	23.	23.	27.	200	30.	30.	30.	130.0

TABLE 4. (cont.)

				Lamp	Lampanyctus	spp. (cont.)) 	1
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE JULY	JULY	AUG.	SEP.	ocr.	NOV.	DEC.
30.0 100.			 	2.8	,		1	ı	ı	1	0.0	i
30.0 120.	1	•	1	5.6	ì	ı	ı	ı	ì	1	7.6	ı
33.0 25.	1	•	I	7.9	ı	ı	ı	ı	1	0.0	ı	I
33.0 40.	ı	•	ı		I	ı	ı	ı	ı	3°0	ı	ı
33.0 45.	ı	٠	1		ı	ł	ı	ı	ı	2.9	ı	I
33.0 50.	ı	•	I		ı	I	ŀ	ı	ı	0.0	ı	ł
33.0 55.	1	•	I		1	ı	ı	ı	I	0.0	ı	ı
33.0 65.	1	•	i		ì	ı	ı	I	ı	0,0	ı	I
33.0 80.	ı	œ,	ı		t	ı	ı	I	t	5.4	1 6	ı
37.0 35.	ı	٠	ı		ı	١	t	ı	ŀ	ì		I
37.0 45.	1	٠	ı	7.7	1 1	1 1	I 1	1 1	1 1	1 1		
37.0 50.	1	•	ı		ı	I	l	1 1) (1 1		
37.0 55.	1 1	•	1 1		1 1	H	H	l 1	1 1	1 1		- 1
37.0 00.70	1 1	, ,	۱ ا	, ,	ı	ı	ı	ı	1	I	0.0	ı
37.0 70.	1	•	ı 1	20.0	ı	ı	ı	1	1	ı	2.8	1
40 0 35	1	•	ı	0.0	1	1	ı	1	1	ı	0.e	ı
40.0	1	•	ı	0.0	ı	ı	ı	1	1	1	0.0	1
140.0 50.0	1	2.9	1	0.0	1	I	1	ı	1	1	0.0	1
				-	1	() () () () () () () () () ()						
				חק	III pari ye t	nampanyclus regails	277	1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	1	1
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
73 0 60		; ; ; ;) 		1	1	2.8	I	ı
7.0 60.	•	0.0)))	0.0	ı	ı	0.0	1	1	2.5	t	i
7.0 80.		0.0	t	0.0	1	I	0.0	ı	ı	2.7	1 /	1
0.0 32.	0.0	ı	ı	0.0	ı	i	I	1 4	ı	ı	11.2	ı
0.0 110.		ı	i	1 (ı	ı	I	7.7	I	1 6	ı	ı
0.0 120.	0.0		ı	0.0	1 1	1 1	1 0	4. 1	f f	2.0	1 1	1
3.0	1 1	•	1 1		l f	l I		1	I	0.0	t	ł
00 0 55	ŀ	•	ı	0.0	1	1	2.4	ı	1) -	0.0	1
00.0 120.	ı		ı	15.9	ì	ı	!	1	1	1	0.0	ı
107.0 65.0	1	0.0	ı	2.8	ı	ı	0.0	i	1	0.0	I	ı
07.0 70.	ı	•	ı	0.0	I	1	0.0	I	ı	۲.8	ı	ı
				La	mpanyct	Lampanyctus ritteri	eri					:
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0.0 55.	2.9	ı	0.0	1	1	1	ı	ı	ı	0.0	ł	I
0.09 0.09		ı	0.0	ı	ı	1	ı	ı	ı	 	l	1
0.0 70.		l	0.0	I	I	ı	1	ì	ı	2.0	i	ı
0.0 160.	000	1 1	υ Σ	1	1 1) i	1 1	i i	1 1) c	1 1	1 1
0.0	٠	l	6.7	ı	ı	ì	ì	ì	I	>	!	

TABLE 4. (cont.)

				Lampan	yctus	Lampanyctus ritteri	(cont.)	^				
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0.0 80.	0.		•		1	ı	1	1	1	0.0	1	
0.0 90.	0 2.9	i	2.7	ı	ı	ı	ı	ı	ı	5.6	ı	ı
0.0 100.	5.	ı	•	1	ı	1	ı	ı	ı	ı	ı	ı
0.0 120.	m (ŀ	•	l	ı	I	ı	ì	ì	1 4	ı	i
7.0 57.		I	•	I	ı	í	I	1 0	i I	0.0	ł	1
0.0		ı	-	i 1	l I	1 1	i I	0.0	I 1	9.11	1 1	į I
0.0		ı	٠	ı	ı	ı	ı	1 6	I 1	•	ŀ	1
0.0	•	ı	٠	ı	I	ł	ı	•	I	•	ļ	i
0.0 90.	0.0	1	٠	i	ı	ł	ı	•	ı	•	i	t
0.0 100.	.0	ı		ı	ı	1	ı	0.0	ı	8.0	ı	ı
0.0 120.	0.		34.0	1 6	ı	ı	1 0	•	ı	٠	ı	ı
3.0 60.		٠	ı	2.9	i	ı	0.0	ı	ı	•	ı	ł
$\frac{3.0}{2.0}$		•	ì	٠	ı	ı	٠	ł	ı	٠	1	ı
3.0 70.		•	i		i	ı	٠	ı	ı	•	ı	ı
3.0 80.		•	ı	•	ı	ì	•	ı	ı	•	1	ı
3.0 90.			ì	•	ı	ı	٠	ı	ı	٠	ı	ı
7.0 40.		•	1	•	1	ŀ	•	i	i		ı	ı
7.0 45.			ı	•	ı	•		1	ı		ı	i
7.0 50.			ı		ŀ	1	•	ř	ı	•	t	ı
7.0 55.			í	•	ł	ı		ı	ı		ı	1
7.0 60.		2	ı	•	1	1		ı	ı		ı	ı
7.0 65.	1		ı		ł	i	0.0	ı	ı		ı	ı
7.0 70.		2	ı	•	ı	1	•	1	ı		ı	I
7.0 80.			1	•	1	ı		1	ı		ı	ı
7.0 90.		2.9	ı	8.9	1	1	0.0	ı	1		ı	ı
0.0 50.			ı		ı	1	i	5.4	ı	ı		ı
0.0 60.	0	ı	1	0.0	1	ı	ı	4.9	ı	1	5.5	ł
0.0 65.	2.	ı	i	•	1	ı	1	ı	ı	11.1	ŧ	1
0.0 70.		1	1	0.0	1	ı	ı		i	2.8	ì	ı
0.0 80.	2.	1	ı	•	ı	1	ı	0.0	ı	0.0	ı	ł
0.0 90.	0	ł	i	٠	ι	ı	ı		ı		ı	ı
0.0 100.	0	i	I	4	ı	ı	1	•	ı		ı	١
0.0 110.	1	1	I		ı	ı	ı		ı		ı	١
0.0 120.	7	1	1	•	1	1	ı	•	ı		ı	ı
0.0 140.	0		ı	٠	ı	ı	i		1	0.0	ı	ı
3.0 28.		•	I	•	ŧ	ı	0.0	i	1	•	ı	ı
3.0 30.	1	•	ì	•	1	1	•	I	ı		í	ı
3.0 35.		•	ı	0.0	1	i	•	ı	i	5.3	1	ı
3.0 40.	1 0	•	i		1	ı	•	1	ı	0.0	i	ı
3.0 60.	- C	•	1		i	ı		ı	ı	0.0	ı	1
3.0 65.	- 0	ж •	1	•	ı	ı	•	ı	1	0.0	ı	t
3.0 70.	- 0	e.	1	•	ı	ı	٠	ı	ı	0.0	ı	ı
3.0 80.		8.2	ı	0.0	ı	1	2.5	ı	ı	0.0	1	ı
3.0 90.	- 0	0	ı	5.7	ı	ı	•	ŀ	ι	0.0	1	ı
$\frac{3.0}{2.0}$		٠	ı	$\frac{13.7}{2}$	ı	ı	•	ı	ı	0.0	i	1
/.0 35.		•	ı	0.0	ı	ı	•	1	ı	3.0	l	ı

TABLE 4. (cont.)

Lampanyctus ritteri (cont.)

STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
		1		1			1					
7.0 40.	t	٠	ł		ł	ı	٠	ı	ı		I	ı
7.0 45.	ı	•	1	•	ŀ	1	•	ı	ı		ı	ı
7.0 50.	ı	•	ı	•	ı	ı	•	ı	1	•	ı	ı
7.0 65.	ı	•	ı	٠	ł	i		1	ı	•	ı	ı
7.0 70.	1	٠	1	•	ı	ł		ı	ı	•	ı	ı
7.0 80.	ı	•	1	•	1	1	•	ı	i	0.0	1	ı
7.0 90.	ı	•	1		ı	ı		1	ı	٠		ı
00.00	i	•	1	•	i	ı	٠	1	I	ı	•	I
00.0 40.	ı	•	ı	•	ı	ı	•	ı	ı	1	•	t
00.0 45.	i	•	ı	•	ı	1	•	ł	ı	ı	•	i
00.00	ı	•	ι	5	ı	ı	5.6	ł	ı	1	0.0	ŀ
00.00	ı	•	1	•	ì	t	•	ı	ı	ı	•	1
00.00	ı	2	ı	0	i	í		1	ı	1	٠	ı
00.00	ı	٠	ı		ı	ı		ı	ı	ı	•	ı
00.00	ı	Š	1	٠	1	ı	•	ł	ı	ı		ı
00.00	1	•	1	5.	i	1	•	ı	ı	ı	•	1
00.00	I	•	1		ı	1		ı	ı	ı		ı
00.0 120.	I		1	•	ı	1		1	ı	ı		ı
03.0 30.	ı		1		1	ı		ı	ı	•	ı	ı
03.0 35.	ı		ı		1	ı		ł	1	•	i	ı
03.0 40.	ı	•	1		1	1		ı	ı		ı	ŀ
03.0 45.	ı		1		1	1	•	1	ı		ı	ı
03.0 50.	ı	•	1		1	ŧ		ı	ı	•	ı	1
03.0 55.	1		ı		ı	i		ı	I		1	ı
03.0 60.	ı	•	ı		i	ı	•	1	1	٠	ı	l
03.0 65.	ı		ı	•	ı	ı	٠	1	ı	•	ı	ŀ
03.0 70.	1		1	10.6	1	1		I	1	•	i	I
03.0 80.	i	•	ł	ŝ	i	ı		I	I		ı	I
07.0 40.	ı	•	1		t	ı		ı	ı	٠	ı	1
07.0 45.	ı	٠	ı	7	ı	i		ı	ı	•	ı	I
07.0 50.	ı		ı	-:	ı	ı	٠	ı	ı	•	1	I
07.0 55.	I	2.	I		ì	١		ı	ı	ή,	I	ŀ
07.0 60.	I	•	ı	•	ı	ı	•	I	1	•	ı	Ι -
07.0 65.	ı	٠,	ı		1	1		i	l	٠	i	I
07.0 70.	1	٠	ı		ı	ı		ı	I	0.0	1	
0/.0 90.	ı	٠	ı		ι	i	•	ì	ı	•	i	
10.0 35.	1	•	ı		I	ı		1	l	ı		ı
10.0 40.	ι	•	ı	•	l	ı		ı	1	ı		I
10.0 45.	ı		ı	2	I	ı		i	ı	ı		I
10.0 50.	ı	•	ı		ı	I		ı	I	ı		ŀ
10.0 55.	I	٠,	ı	٠	ı	ı		I	I	ł		1
10.0 60.	1		l	٠	ł	i		I	ı	I) !
10.0 65.	ı	<u>.</u>	t	•	I	I		I	ı	ı	•	l i
110.0 /0.0	I	18.5	ı	» o	ı	1	0.0	ı	ı)		l I
10.0	1 !	•	1 1		1 1	1 1		l t	l I	1		ŀ
10.0	I	•	I	٠	I							

TABLE 4. (cont.)

Lampanyctus ritteri (cont.)

						THE STATE) LIV		- E- C-	7001	0.00
STATION	JAN	FEB.	MAK.	APR.	MAI	JONE	3061	900	OEF.	3		:
	ı		1		1	1	1	ı	1	1	0.0	ı
13.0.50	ı		ı	18.3	ı	ì	0.0	ı	ı	0.0	ı	ı
13.0 60.	1		1		ı	i	0.0	1	ı	2.7	ι	ı
13.0 65.	1		ı	•	1	1	2.2	ι	ł		i	ı
13.0 70.	ı		1		ì	1	•	i	ı		١	ı
13.0 80.	ı	•	ł	•	ı	1	•	ı	ı	0.0	i	ı
17.0 35.	1	•	ŀ	•	ı	1	•	ı	ı	•	ı	1
17.0 50.	ı	•	ı		ı	ı	•	ı	ı		ı	i
17.0 65.	ı		i		ı	1	•	ı	1		ì	1
17 0 70	ı		ı	•	1	j		1	1	•	1	ı
18 0 30	ì	•	ı	•	ı	1		ı	ı		ı	ı
70.0	•	•	ı	•	1	ŀ		ı	ı	•	0.0	1
20.02		•	ı	٠	ı	ı	٠	ı	ı	ı		ı
20.07	ı	٠	ì	•)		•	ı	ı	ı		ı
20.0 60.	ı	٠	ı	•	ı	ı	•	۱ ا	. 1	c	•	١
23.0 42.	ı	٠	ı	٠	ı	I	•	ı	I	•	1	1
23.0 60.	ı	•	ı	٠	ı	i	•	ı	ì	•	ı	ı
23.0 70.	ı	•	ı	•	ı	ì	•	ı	i	٠	ı	ł
23.0 80.	1	•	t	•	ı	ı	•	i	ı	•	ì	ı
27.0 40.	ŀ	•	ì	0	ı	1	•	ı	ı	•	i	ı
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TABLE 4. (cont.)

Stenobrachius leucopsarus (cont.)

OCT AUG. JUNE APR. FEB 120.00 STATION

TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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(cont.)	JULY	111	1	•	•	•	0.0	•			•	٠	•	•	ı	1 0	•	7.7		•	٠	•		•	•	•		•	•	ı	2.2	• •	•	0.0		•
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Dioger	APR.	0.0	•		•	•	• •		• •	•	•	•	٠	• •	•	٠	•	•	•	٠	•	•	, œ	•	•	•		•	•	•	•	• •	•	ۍ. ه د		•
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	STATION	90.0 100.0	0.0 160.	3.0 28.	3.0 80.	93.0 90.	3.0 80.	03.0 90.	07.0 32.	10.0 55.	10.0 65.	10.0 70.	10.0	10.0 120.	10.0 140.	10.0 160.	13.0 55.	13.0 65.	13.0 80.	13.0 90.	17.0 50.	17.0 55.	17.0 80.	17.0 90.	20.0 45.	20.0	20.0 65.	20.0 80.	20.0 90.	20.0 100.	23.0 120.	23.0 45.	23.0 50.	23.0 60.	23.0 70.	27.0 40.

TABLE 4. (cont.)

TABLE 4. (cont.)

93.0 66.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
93.0 65.0 65.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	93.0 60.	 	٠ .	1		ı	ı		1	ı	2.8	ı	1
93.0 70.0	3.0 65.	ı		ı	•	ì	ı	•	ı	ı	٠	ı	ı
93.0 80.0	3.0 70.	1		ı	•	ı	ı	•	ì	ı	•	ı	i
93.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0	3.0 80.	i		1	•	1	ı	•	ı	ı	•	ı	ı
93.0 100.0	3.0 90.	ı		ı	ς N	ı	ı	٠	ı	ı		ì	ı
97.0 45.0	3.0 100.	ı		ı	7.	ı	ı	•	I	ı	•	l	
97.0 50.0	7.0 45.	1	٠	ı	•	ı	ı	٠	i	ı	•	I	ł
97.0 55.0	7.0 50.	ı	•	ı	•	ı	ı	٠	ı	ı	٠	1	ı
97.0 66.0 97.0 66.0 97.0 66.0 97.0 700 97.0 80.0 97.0 80.0 97.0 80.0 97.0 80.0 97.0 80.0 97.0 80.0 97.0 80.0 97.0 60.0 97.0 60.0 97.0 80.0 97.0 60.0 97.0 80.0 97.0 80.0 9	7.0 55.	ı		ı	•	1	ı	•	ı	i	٠	ı	i
97.0 65.0	7.0 60.	ı		ı	•	ı	ı	•	ı	1	•	ı	t
97.0 70.0 13.0 14.8 27.4 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10	7.0 65.	ı		1	•	ı	1	•	1	ı	•	ı	ı
97.0 80.0	7.0 70.	ı	•	1	•	ı	ı	٠	ı	i	•	ı	ı
97.0 99.0	7.0 80.	ı	4	ı	9	ı	i	•	1	ı	٠	ı	ı
0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.0 90.	ı	5	1	7	ı	ı	•	ı	ı	٠		ı
000 45.0 000 60.0 000 60.0 000 60.0 000 60.0 000 60.0 000 60.0 000 11.1 000 14.4 <td>00.0 35.</td> <td>i</td> <td></td> <td>ı</td> <td>0</td> <td>ı</td> <td>ı</td> <td></td> <td>ı</td> <td>ı</td> <td>ı</td> <td>•</td> <td>ı</td>	00.0 35.	i		ı	0	ı	ı		ı	ı	ı	•	ı
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00.0 65.0	00 0	ı		ı	•	ı	ı	•	ì	1	ı	•	ı
00.0 65.0	000	ł		ı	•	i	ı	•	ì	1	ı	•	ı
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00.0 100.0	00.00	ı		ı	•	ı	ı	•	1	ł	ı	•	ı
00.0 120.0	00.0 100.	1	2	i	•	I	1	1	i	ł	ı	•	ı
00.0 140.0	00.0 120.	ı	9	ı		1	1	ı	ı	ı	ı	•	ı
00.0 160.0	00.0 140.	ı		ı	5.	ı	ł	ı	ı	ı	1	ı	ı
03.0 40.0	00.00 160.	ı		ı	ж •	ı	ı		ı	ı		ı	ı
03.0 65.0	03.0 40.	ı		ı	•	ı	1	٠	ı	l	•	ŀ	ı
03.0 70.0	03.0 65.	ł	•	ı	٠	ı	ı	•	ı	ı	•	ŀ	•
03.0 80.0	03.0 70.	ŀ	•	ı	•	ł	ı	•	ı	ı	٠	ŀ	I
03.0 90.0	03.0 80.	ı	•	1	٠	ı	1	•	ı	ı	•	ı	ı
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07.0 50.0 - 0.0 - 17.5 - 0.0 -	07.0 45.	ı	•	ı	-	i	i	•	I	1	•	ı	
07.0 55.0	07.0 50.	ı	٠	ı		ı	ı	•	i	١	•	I	
07.0 60.0 - 3.0 - 0.0 -	07.0 55.	ı	•	1	•	ı	ı	•	t	I	•	1 1	l 1
07.0 65.0 - 2.8 - 0.0 -	07.0 60.	ı	•	ı	•	ı	ı	•	I	ı	•	1	
10.0 35.0 - 2.8 - 0.0 - 5.1 - 5.1 - 10.0 10.0 45.0 - 0	07.0 65.	ı	٠	i	•	ı	ı	•	i i	ŧ I	2.0	1 1	i
10.0 35.0	07.0 70.	ı	٠	ı	٠	ı	ı	•	I	1 1	•		ı
10.0 40.0 - 0.0 - 7.8 - 3.10.0 45.0 - 0.0 - 0.0 - 3.10.0 50.0 - 2.6 - 5.4 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0	10.0 35.	1	٠	ı	•	l	ı	•]	1 1	. 1	•	ı
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10.0 70.0 - 2.6 - 5.4 0.0 10.0 80.0 - 0.0 - 0.0 - 0.0	10.0 45.	1	•	ı	٠	ļ	l	•	i 1		ı	2.6	١
10.0 80.0 - 2.6 - 5.4 - 7.	10.0 50.	ı	٠	ı	•	I	ı	٠	ıi	1	ı	•	ı
$10.0 \ 80.0 \ - \ 0.0 \ - \ 0.0 \ - \ 0.0$	10.0 70.	ı	•	ı		I	ı	•	ı	1		•	
	10.0 80.	ı	•	ı	0.0	ı	i	•	i	ı	l	•	

TABLE 4. (cont.)

Diogenichthys atlanticus (cont.)

11111111111111111 Diogenichthys laternatus 1111111111111111111 90.0 1000.0 1200.0 1400.0 450.0 550.0 800.0 800.0 800.0 800.0 800.0 800.0 800.0 800.0 800.0 800.0 800.0 800.0 STATION

TABLE 4. (cont.)

 	DEC.	i	1 1	i	ı	ı	ı	ı	i	1	ı	ì	ı	ı	i	r	ı	ı	١	ì	ı	ı	1	ı	ı	ı	ı	t	1	t	ı	ı	ı	i	i	ı	ı	ı	i	ı	ŀ	1
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	ocr.	0.0	٠		•	•	•	•	•	ı	ı	ı	1	1	1	ı	ı	ı	ı	ı	•	٠	•	•	2.8	٠	•	٠	•	ł	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ı
	SEP.	ι	1 1	1	ı	ı	1	i	ı	ı	1	ı	ı	1	ı	ì	ı	ı	1	ı	ı	ı	ı	1	ı	ı	1	1	I	I	ı	ı	ı	ı	ı	i	1	1	ŀ	1	ı	l
(cont.)	AUG.	ı	1 1	ı	1	1	1	ì	i	1	ı	1	ı	ı	1	1	1	ı	ı	ı	ı	ı	ı	ı	1	ı	1	1	í	ı	ı	ı	ı	1	1	1	ı	1	ı	ı	ł	ı
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Diogenichthys	APR.	0.0	•		•			•	•				•		ı							•	•	ъ Ж	ф ж	0	•	٠	•	·	٠.	ö	4	Š		0	œ	٠	•	Š	60.09	œ
Di	MAR.		t I	1 1	ι	1	ı	1	1	ı	ı	ı	ł	ı	1	ı	ı	1	ı	ı	ı	ı	ı	t	ı	i	1	ı	ì	ı	ł	ı	1	í	ı	1	ı	ı	ı	i	ı	ı
	FEB.	0.0	٠	•	•		7	٠	3	•	0	•	ij	5.		•	0	44.	2	•	2	7.	5.	2			٠	5	٠	4	•	S.	9	9	4.	ж ж	•	₹.	•	5	17.3	ė.
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	NO.	34.0		n c				0	0	5.	5	0	5.	0	Š.	0	0	0	00	0	30.	5	0	Š.	0	5	0	0	0	0	5	0	5.	0	5.	0	0	0	Š	0	٠.	·
	TATI	127.0	27.	.12		27.	27.	27.	27.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	33.	33.	33.	33.	33.	33.	33.	33.	33.	37.	37.	37.	37.	37.	37.	37.	37.	37.	40.	40.	40.	40.

TABLE 4. (cont.)

Electrona rissoi

STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
60.0 160.0 70.0 200.0 90.0 80.0 90.0 120.0	10.4 2.7 2.7	0.0	0.0	0.00	1111		0.0	0.00	1111	0.0 0.0 2.9	2.7	1111
1 6				Gon	Gonichthys	7	ulus					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	ocr.	NOV.	DEC.
10.0 140.	ı		ŀ	2.8	1	ı	1 4	ì	ı	1 0	ı	ı
17.0 70. 20.0 80.	1 1		1 1	\. 0 0 0	l 1	1 1	000	1 1	1 1	0.1	0.0	1 1
23.0 70.	ı	2	I	0.0	ı	1	•	ı	ı	0.0	,	1
27.0 65.	1 1	•	1 1	0.0	! !	, ,	۰,0	1 1	1 1	0.0	1 1	1 1
30.0 30.	1		1	0.0	1	.		ı	ı		0.0	ı
30.0 50.	ı	5	ı	0.0	ı	ı	•	ı	ı	1	0.0	ı
30.0 55.	I 1	•	1 1	0.0	ł I	ł	•	1 1	1 1	1 1	000	
30.0 80.	1 1		1 1)	1 1		i #	ı i	ı ı	0.0	1 1
30.0	ı		ı	0.0	ŀ	ı	•	ı	ı	1	0.0	1
33.0 45.	ı		i	0.0	ł	ı	ı	1	ı	0.0	ı	ı
33.0 50.	i	•	ı	0.0	i	ı	ı	ŀ	I	0.0	i	I
33.0 70.	I	•	ı	0.0	ł	1	1	1	1 1	9.0	l I	1 1
33.0 80.	l I		I I	000	l i	I I	l i	1 1	1 1) 	0.0	1
37.0 50.	ı		1	2.8	t	i	1	ł	ı	ı	0.0	ı
37.0 60.	1		ı	0.0	ı	ı	ı	1	ı	ı	0.0	i
40.0 40.	ı	•	ı	0.0	ı	ı	ı	ı	ı	ı	0.0	ı
$140.0 45.0 \\ 140.0 50.0$	I I	4.0 0.0	1 (0.0 2.0	l i	1 F	1 1	1 1	1 }	1 1	00.0	1 1
					Hygop	Hygophum spp						
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
20.0 60.		٠.		0.0	 	i i i i i i i		 	ı	1	0.0	
120.0 80.0 127.0 70.0	1 1	2.5	t t	0.0	1 1	1 1	0.0 2.5	1 1	1 1	0.0	0.0	i i
				7	Hygophum	m atratum	m n					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
103.0 80.0	 	0.0	 	2.5	ı	l	0.0	ı	1	0.0	ı	ı

TABLE 4. (cont.)

0.00 0.00
0.00 0.00
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2.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
0.00 0.00
3.0 .0 .0 .0 .0 .0 .0 .0 .0 .0
2.8 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
0.00 0.00
10.0 10.0
10.2 10.2 10.0
0.00
.00.00
.00.0
.0.0
0.0 0.
APR. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC.

TABLE 4. (cont.)

STATION 90.0 170.0 90.0 170.0 90.0 180.0 90.0 180.0 90.0 180.0 90.0 180.0 100.0 120.0 100.0 120.0 110.0 120.0 110.0 120.0 1113.0 80.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 120.0 100.0 100.0 100.0 120.0 100.0 100.0 100.0 120.0 10											
170.0 180.0 100.0 100.0 100.0 120.0 120.0 120.0 140.0 160.0 10	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCII.	NOV.	DEC.
180.0 200.0 100.0 65.0 120.0 120.0 120.0 140.0 140.0 160.0 100		1	}	1	ì	ı	•		1	1	ı
200.00 100.00 120.00 120.00 120.00 120.00 140.00 140.00 160.00 10	ļ	i	5.4	I	ı	ı	7.2	ı	2.6	ı	ı
100.00 90.00 120.00 90.00 90.00 90.00 120.00 140.00 160.00 100.00		ı	8.3	ı	ì	ı	•	ı	2.7	t	ļ
90.00 120.00 80.00 90.00 120.00 140.00 160.00 100.00 1	•	ı	2.7	ı	ı	•	ı	ı	5.7	ı	ı
120.0 80.0 90.0 90.0 120.0 140.0 160.0 100.0	2.9	ı	6.1	ı	ı	0.0	ı	ı	0.0	1 0	ı
120.0 90.0 120.0 140.0 160.0 90.0 90.0 100.0	•	ı	٠	1	ı	•	ı	ı	ı	2.9	ı
90.00 120.00 120.00 140.00 160.00 90.00 100.00 120.00 65.00 65.00 160.00 16	٠	ı	•	I	l	1 6	ı	ı	1 6	2.1	ı
80.00 80.00 120.00 140.00 160.00 80.00 100.00 120.00 60.00 60.00 60.00 60.00 100.0	•	ı	0.0	ı	I	•	ı	ı	٠ ١٠	ı	ı
90.00 90.00 120.00 140.00 160.00 90.00 100.00 120.00 65.00 60.00 80.00 160.	•	ı	•	I	ı	0.0	I	ı	n o	ı	ı
90.00	٠	ı	1 4	I	ı	0.0	ı	ı	0.0	1 0	ı
120.0 140.0 160.0 80.0 90.0 100.0 120.0 65.0 60.0 80.0 160.0	•	ı	0.0	ı	ı	0.0	1	ı	1	2.8	ı
120.00	٠	ı	٠	I	ı		I	I	J	6.9	I
140.0 160.0 90.0 90.0 120.0 60.0 60.0 60.0 160.0 160.0 160.0 70.0 70.0 16	•	I	٠	ı	ı	ı	ı	ı	ı	g. 6	ı
160.0 80.0 80.0 100.0 120.0 65.0 65.0 80.0 80.0 160.0 160.0 70.0 70.0 200.0 150.0 150.0 150.0	ı	ı	•	ı	ı	I	ı	ı	ı	ı	ı
80.0 80.0 80.0 100.0 120.0 60.0 60.0 60.0 80.0 160.0 160.0 70.0 70.0 200.0 150.		ı	•	ı	1	1	ı	ı	1 4	ı	ı
90.00	•	ı	•	ı	ı	2.9	ı	ı	0.0	ı	ı
90.00		1	•	ı	ı	4.8	1	ı	0.0	ı	ı
100.00	•	ı	•	ı	ı	5.0	ı	ı	ı	0.0	i
100.0 120.0 60.0 60.0 80.0 90.0 80.0 	•	ı	٠	1	ı	4.8	ı	1	1	0.0	ı
120.0 60.0 60.0 80.0 90.0 160.0 160.0 70.0 200.0 200.0 150.0 150.0 150.0 150.0 150.0 150.0 150.0 150.0 150.0	•	ı		ı	t	ı	1	1	ı	2.8	ı
66.0 65.0 80.0 90.0 80.0 	•	t	•	ı	ı	ı	ı	ı	ı	2.7	ı
65.0 60.0 90.0 90.0 	•	ı		1	ł	0.0	ı	ı	0.0	ı	ı
60.00 80.00 80.00 80.00 160.00 160.00 70.00 70.00 200.00 0.0 200.00 0.0 150.00 160.00 160.00 160.00 160.00 160.00 160.00	•	1	•	ı	ı	0.0	ı	1	0.0	ı	ı
90.00 80.0 80.0 160.0 160.0 70.0 70.0 200.0 0.0 200.0 0.0 150.0 160.0 160.0 160.0 160.0	•	1	•	ı	1	•	ı	ı	ı	0.0	i
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TABLE 4. (cont.)

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TABLE 4. (cont.)

Protomyctophum crockeri (cont.)

SEP. STATION

TABLE 4. (cont.)

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TABLE 4. (cont.)

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Symbolophorus californiensis (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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Merluccius productus

DEC. DEC. NOV NOV SCI OCT SEP. SEP (cont.) JULY Physiculus spp JUNE JUNE MAY APR. FEB. JAN. STATION STATION 133.0

TABLE 4. (cont.)

Macrouridae

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TABLE 4. (cont.)

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	APR.	1111	1 1	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	000		APR.	00000		APR.	0.0
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TABLE 4. (cont.)

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5.3 - 0.0	FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. - FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. - 2.6	'		• •	ı	• •	ı	ı	ı	1	1	,	0.0	i
FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.	POTOMİTA SPD. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 0	,			1		1	ı	1	1	ı	ı		t
2.6 - 0.0 0.0 POTOMITE SPP. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 2.6 -	2.6 - 0.0 0.0 **Poromitra spp.** **FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.** 0.0 - 2.6 0.0 0.0 - 0.0 0.0 0.0 - 0.0 0.0 0.0 - 0.0 0.0 0.0 - 0.0 0.0 0.0 - 0.0 0.0 0.0 - 0.0 - 0.0	•			1		ı	ı	ı	1	1	ı		ı
Poromitra spp. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 2.6	Poromitra spp. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 2.6		ı		ı	•	1	1	ı	ı	ı	ı	•	ı
. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 1	FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 0 - 2.6 - - - 2.2 - - 0.0 - 2.6 - - 2.6 - - 2.6 - - 0.0 - - 2.6 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 0.0 - 0.0 0.0 - 0.0 0.0 - 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td>Poromi</td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td>						Poromi		•					
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.0 - 2.6 - - 2.6 - - 2.6 - - 2.6 - - 2.6 - - 2.6 - - 2.6 - - 2.6 - - 0.0 - - 0.0 - - 0.0 0.0 - 0.0 - 0.0 0.0 - 0.0 0.0 - 0.0 0.0 - 0.0 0.0 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 </td <td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td> <td></td> <td>,</td> <td> </td> <td></td> <td>,</td> <td>•</td> <td>ı</td> <td>1</td> <td>1</td> <td>ı</td> <td>•</td> <td>1</td> <td>1</td>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$,	 		,	•	ı	1	1	ı	•	1	1
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0.0	0.0			•	ı	٠	I	ı	2.5		ı	•	ı	ı
0.0	0.0		•		ł	•	ı	ı	1 4	٠	I	•	ı	ı
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$egin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		ı		ı		ı	ı	3.0	ı	ı	1 4		i
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		ı		ì	٠	I	ı	2.3	ı	ı		ı	ı
2.7 - 0.0 5.6 -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		ı		ı		ł	I	0.0	ı	1	•	ł	ı
	2.9 - 0.0 0.0 0.0 -		1		i		I	ı	0.0	ı	ŀ		ı	i
Scopeloberyx robustus		7	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
Scopeloberyx robustus . FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.	FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.	i	0.0	t		0.0	[0.0		2.6	10	1
Scopeloberyx robustus . FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.	. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.		I	•	ı	0.0	ı	ı	0.0	I	ı	I	7 - 7	I
Scopeloberyx robustus FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV.	. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. 0 0.0 - 2.6 - 2.7 0.0 2.6 - 2.7													

TABLE 4. (cont.)

	DEC.	1	1	1 (1	ı	ı	í	ı	ı	1	ı	ı	ı	1	1	ı	ı	ı	ı	ł	ı	ı	ı	I	ı	ł	ı	1	i	1	١	ł		DEC.	 	ı	ı	ı	1 1	
	NOV.		I	1 1	ı	ı	ı	ı	ı	ı	ı	ı		0.0	2.7	ı	ı	ı	ı	i	2.8	2.9	1	ı		0.0	5.6	i	ı	1 4	0.0		I		NOV.	! ! ! ! ! ! !	1	ı	1 0	00	•
	OCT.	1 0	0.0	2 6	0.0			ı	0.0	0.0			•	ı	1	2.8		•	0.0	•	ı	i		0.0	ı	ı	1 4	0.0	0.0		1		2.6		OCT.		٠	2.7	٠	1 1	
	SEP.	1	l	1 1	ı	ı	ı	1	1	1	ı	1	1	1	I	ł	i	ı	ı	ı	ı	1	1	1	ı	ı	ı	ı	ı	1	ŀ	ı	l		SEP.	 	ı	ı	ı	1 1	
	AUG.		0.0		•	-				2.5	•	1	ı	I	ı	I	ì	ı	ı	i	ł	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	1	ı		AUG.	 	ı	ı	ı	1 1	
bispinosus	JULY		t I	1 1	2.7		ı	1	1	1	0.0	0.0	0.0	2.4	٠	•	•	•	•	•	•		•	•	•		0.0			٠		٠	ı	cilis	JULY		•	0.0	•	o. 0 I	
	JUNE	l	ı	ΙI	ı	1	1	1	ı	ı	ı	ı	1	ì	ı	ı	ı	ı	ı	ı	ı	1	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	Macroramphosus gracilis	JUNE		ı	ı	ı	1 1	
Scopelogadus	MAY		Į	l !	1	ı	1	1	ı	ı	ı	1	ı	ı	ı	ì	ı	ı	i	ı	1	ı	ı	1	1	ı	ı	ı	ı	ı	ı	ı	I	orampho	MAY		ı	ı	ı	1 1	
Scop	APR.		I	c 1 C		•	•	1	0.0	0.0	2.6		•	0.0	•		•	•	•				•			•	0.0	٠	•	٠	•	•	•	Macro	APR.		•	٠	•	00	٠
	MAR.	3.0		1 1	ı	ı	1	1	1	ı	ı	ı	1	ı	ı	i	1	ì	ı	1	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	I		MAR.		ı	ı	ı		
	FEB.	 	ì	ı	0	•	ı	ı	ı	ı	0.0	0.0			•	•		•			•	•	•	•	•	•	•				•	•	•		FEB.	1 •	٠	•	٠	9.0	٠
	JAN.	0.0	•	c 1 C	•	0 0		ı		0.0	•	i	t	ı	i	ı	ı	ì	ı	ı	ı	ı	1	1	ı	1	ı	ı	1	ı	ı	ı	ı		JAN.		ı	ı	ı	1 1	
	ON	100.0	000				0.0	30	40.	60.	28.	0	0	5.	0	0	5.	5	0	0	0	0	5	0	5.	0	ا	Š	0	0	0	0	0		NO	0.	。	0	· •	0.08	•
	ATI	70.0	· .		٠,							<u>ر</u>	97.	00	00	03.	07.	07.	07.	07.	10.	10.	13.	17.	20.	20.	0	23.	23.	23.	30.	30.	33.		STATI	07.	13.	13.	17.	130.0	•

TABLE 4. (cont.)

ULY AUG. SEP.	ULY AUG. SEP.	AUG. SEP. 0.0	AUG. SEP.	JULY AUG. SEP. C 0.0 0.0 0.0 2.6
0.0 0.0 0.0 0.0 2.6 10LY Aug. 10LY Aug. 10.0 1	0.0 0.0 0.0 0.0 2.6 10 10 10 10 10 10 10 10 10 10	AUG	AUG.	AUG.
0.00 2.6 0.00 0.00 0.00 0.00 0.00 0.00 2.4 2.3	0.00 2.6 2.6 0.00 0.00 0.00 0.00 0.00 0.			
2.6 DILY 	2.6 10LV 			
FULY AUG.	FULY AUG.	AUG.	AUG.	AUG.
JUNE JULY AUG.	JUNE JULY AUG.	AUG.	AUG.	AUG.
5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5.0	33.7	2.7 3.0 	2.7 3.0
5.0 0.0 0.0 0.0 1.1 1.1 1.1 1.1 1	5.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1	3.0 3.0	3.0	3.0
5.0 0.0 0.0 0.0 0.0 0.0 1.1 1.1 1	5.0 	3.7.	2.7 3.0 	2.7 3.0
5.0 0.0 0.0 0.0 0.0 0.0 1.1 1.1 1	5.0 	3.0 3.0	2.7 3.0 	2.7 3.0
5.0 5.3 5.3 6.0 6.0 6.0 7.7 7.7 7.7 7.7 7.7 7.7 7.7 7	5.0 	3.07	2.7 3.0 	2.7 3.0
5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5.0 5.0 0.0 0.0 0.0 1.1 1.1 1.1 1.1 1	0.	3.0	3.0
5.0 0.0 0.0 0.0 3.5 4.0 0.0 2.3	5.0 0.0 0.0 0.0 3.5 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			AUG. SEP. C
20.00 3.54 0.00 20.00 3.54 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20.000.000.000.000.0000.0000.0000.0000.0000			AUG. SEP. C
2.4	22.4			
0.0 0.0 2.4 3.5 	2.4			AUG. SEP. C
2.4 3.5 0.0 7.1	2.4			AUG. SEP. C
3.5 0.0 2.3	3.5			AUG. SEP. C
2.3	2.3	1 1 1		AUG. SEP. C
2.3	2.3	1 1		AUG. SEP. C
	1	1	AUG. SEP. C	AUG. SEP. C

TABLE 4. (cont.)

			Sco	rpaenic	shthys	Scorpaenichthys marmoratus (cont.	tus (c	ont.)				
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
8	1 1	2.5	1 }	0.0	1 1	1 1	0.0	1 1	1 1	0.0	 	
					Cycle	Cyclopteridae	ē					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
83.0 51.0 97.0 30.0		0.0	 	3.0		i 	0.0	 	 	0.0	i 	i ! !
					Нехад	Hexagrammidae	a					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
7.0	ı	1.8	ı	0.0	ı	ŀ	0.0	ı	ı	0.0		
				_	xylebi	us pict	sn					
STATION	JAN.	FEB.	MAR.	APR.	MAY	MAY JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
9		1 1	0.0		t i	11	1 1	1 1	1 1	0.0	1 1	, ,
3.0 55.	ŀ	0.0		2.9	ı	ı	0.0	ł	ı	0.0	1	ı
	 	 	 	 	Zaniol	Zaniolepis spp	•					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
7.0 51	•	١	0.0	,	I	ı	1	1	l	0.0		
0.0 52	•			1 0	1	l i	1 0	1	l I	0.0	ı	i
7.0 35	1			3.5	i i	l ł	0.0))	l I	000	1 1	l I
7.0 30	ı	•	1	0.0	1	ı	0.0	i	i	2.0	1	ı
97.0 32	H	•	ł (0.0	1 -	1	10	1	1	0.0	i !	ı
120.0 30.0	1	0.0	1	2.5	1	ı ı	0.0	ıi	1 1	0.0	i I	1 1
23.0 37	ı	•	ı	0.0	ı	1	0.0	ı	ſ	0.0	ı	1
					Scori	Scorpaenidae	4 1				:	
H	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
7	١	0.0	1	0.0	 		0.0	 	 	2.8	 	!

TABLE 4. (cont.)

Scorpaena spp.

DEC.	1111111111	DEC.	
NOV.	3.0000	NOV.	
OCT.	0.000071	OCT.	200.00 100.00
SEP.	1111111111	SEP.	
AUG.		AUG.	46.5
JULY	2.8 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3	JULY	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
JUNE	sehastes sub.	JUNE	11111111111111111111111111111111
MAY		MAY	
APR.	0000000000	APR.	68.22 6.03 6.03 6.03
MAR.	1111111111	MAR.	250.0 11.4 14.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4 11.4
 FEB.	0000000000	FEB.	86.1 1.6.1 1.6.1
JAN.	1111111111	JAN.	1025.6 1027.4 102.7 67.44 67.44 77.3 16.6 16.6 16.6 573.3 14.2 14.2 14.2 14.2 14.2 14.5 15.0
 	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		28.00 20 20 20 20 20 20 20 20 20 20 20 20
i E	100.0 113.0 113.0 113.0 117.0 127.0 127.0 130.0	STATION	60.00 60.00 60.00 60.00 60.00 60.00 777.00 777.00 777.00 777.00 880.00 880.00 880.00 883.00

TABLE 4. (cont.)

DEC.		
NOV.	NOV. 100.8 0.0 0.0 2.8 2.8	22.6 0.0
OCT.	2007. 200.000000000000000000000000000000	0.0800
SEP.	🛱 i	
AUG.	AUG.	
JULY	JULY 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	31.9 10.4 0.0 0.0 0.0 0.0
JUNE JUI		
MAY	WW	
APR.	g	
MAR.	<!--</b-->!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	
	# m00m7d0480001	
JAN.	25.55 25.34 25.35 26.38 25.36 26.38	12.8
NO	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	200000000000000000000000000000000000000
ATI	A www.vr/r/r/r/r/r/r/r/r/r/r/r/r/r/r/r/r/r/r/	

OCT. Sebastes spp. (cont.) 28.28 29.38 29.38 29.38 23.33 23.34 25.38 23.55

TABLE 4. (cont.)

	DEC.	1111	1 1 1 1	1 1 1 1		DEC.	1 1	 	DEC.	1111111	DEC.	1111111
	NOV.	111	1 1 1 1	0.01		NOV.	i i		NOV.	8.7 8.7 12.3 29.4	NOV.	0.000
	OCT.	0000	0000			OCT.	0.0	1	ocr.	0.0 0.0 38.3 2.7	OCT.	0 00000
	SEP.	1111	1111	1 1 1 1		SEP.	1 1	 	SEP.	1111111	SEP.	1111111
	AUG.	1111	1 1 1 1	1 1 1 1		AUG.	2.7		AUG.	1111111	AUG.	4.0821111 0.000
ont.)	JULY	0000			.dc	JULY	2.5	•	JULY	2.1 2.3 0.0 - - - SPD.	JULY	2.77
spp. (cont.	JUNE	1111	1 1 1 1	1 1 1 1	lopns spi	JUNE	11	tus spp	JUNE		JUNE	11111111
Sebastes s	MAY	1111	1 1 1 1	1 1 1 1	Sebastolobus	MAY	1 1	Prionotus	MAY	Hupsoblennius	MAY	
Sel	APR.	2.7 23.7 11.2 0.0	5.2 3.0 3.0	0.0 2.5 0.0 5.4	01	APR.	0.0		APR.	0.0 0.0 0.0 0.0 0.0	APR.	0.0000
	MAR.	111	1111	1 1 1 1		MAR.	i I	 	MAR.	1111111	MAR.	0.0111111
	FEB.		0000			FEB.			FEB.	00.00	FEB.	0.00
	JAN.	1 1 1 1	1 1 1 1	1 1 1 1		JAN.	0.0	1	JAN.	111111	JAN.	00
	ı ⊟	0 45 0 50 0 55 0 34	27.0 40. 27.0 45. 27.0 50. 27.0 55.	27.0 60. 30.0 30. 33.0 30. 33.0 35.		STATION			TATION	120.0 25.0 137.0 34.0 130.0 30.0 133.0 25.0 137.0 23.0 137.0 30.0 140.0 30.0	AT	80.0 53.0 80.0 70.0 90.0 28.0 90.0 30.0 103.0 40.0 113.0 30.0 120.0 50.0

TABLE 4. (cont.)

				Hypso	Hypsoblennius	s spp.	(cont.)					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
123.0 45.0 130.0 30.0	 	0.0	1 1	0.0	1 1	1 1	0.0	1 1	ì I	2.8	8.7	1 1
30.0 35.	ł		ı	0.0	1	ı	0.0	1	ŀ	ı	2.8	ı
37.0 23.	ı	•	ì	0.0	ı	ı	ı	ı	ì	I	0.0	ı
					C1 j	nidae						
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
60.0 52.	;	 	0.0	ĺ	; ; ; ; ; ; ;			, , , , , , ,		0.0		
0.0 55.	96	ı	0.0		1	ŀ	i	1	ı	0.0	i	i
3.0 52.	9	ŀ	0.0		i	j	ŀ	j	ł	0.0	ı	ı
3.0 55.	•		0.0		1	ı	1 0	ı	ı	0.0	1	ı
3.0 51.	I	٠	I		I	I	0.0	ł	ı	0.0	ı	ı
7.0 35.	1 1	0.0	ΙI	7.0	1 1	1 1	000		1 1	0.0 2.0	1 1	1 1
0.0 50.	0	•	1 1	3.0		1 1	0 1	2.7	1	0.7	0	ı i
7.0 30.	•	•	1	0.0	ı	ı	4.8	1	ı	2.0) 	ı
03.0 30.	1	•	ı	2.2	ı	ı	0.0	ı	ı	0.0	ı	ı
10.0 33.	ı	•	ı	1	ı	ı	:	ı	ı	1	ı	ı
13.0 30.	1	•	ı	5.6	ı	ì	0.0	ı	i	0.0	ı	ı
10.0	ı	٠,	1	0.0	1	1	4.0	l)	0.0	i)
123.0 40.0	1 1	78.0	1 1	7.7	1 1	1 1		1 1	1 1	0.0	ı ı	1 1
23.0 42.	1	m	1	0.0	1	1	7.7	ı	ı	0.0	ı	ı
					Cob	oiidae						
STATION	JAN.	FEB.	MAR.	 APR.	MAY	Y JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0.0 60.		1 1 1 1 1 1 1	0.0	 	 	i 	 	 		3.1		
3.0 55.	0.0	ı	3.1	I	1	ŀ	ì	1	ı	0.0	1	ì
7.0 51.	•	ı	2.8	ı	ı	ı	ı	ı	ı	0.0	ı	ı
7.0 55.		ı	0.0	1	ı	ı	I	1	ı	2.7	ŀ	ì
0.0 53.		f	1 0	I	l	ı	ı	4.9	I	1	ŀ	ı
0.0	7.7	1		ı	I	ì I	1		1 1	1 0	1 1	i i
2.0 47			0.1	0) [l i	0.0	n . I		2.7	1	1
3.0 43.	I		ı	0.0	ı	1	0.0	I	ı	2.5	ı	ı
3.0 51.	ì		ı	3.0	ı	I	0.0	ı	I	0.0	ı	ı
7.0 40.	1 :	0.0	I	0.0	ı	1	2.9	1	1 1	0.0	1 1	1 1
7.0 60.	1 1	• •	1 1	0.0	l I	1 1	0.0	1) [7.6	1	ı
90.0 37.0	0.0	•	ı	2.8	1	ì)))	ı	ı	. 1	0.0	ı
0.0 40.		I	ŀ	ŀ	I	ı	ŀ	4.7	ı	ı	1 0	1
0.0 45.	0.0	I	I	3.0	I	ł	ı	I	I	i	0.0	ı

TABLE 4. (cont.)

Gobiidae (cont.)

IA	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
	ŀ	! ! ! !		ı		 	 					
0.0	0.0		I	•	I))	I 1	0		
3.0 30.	ŧ	•	l	•	I	ı	٠	ı	l		I	ı
3.0 60.	ı	0.0	ı	٠	ı	ł	٠	ı	ſ	0.0	ı	ı
3.0 80.	ı	•	i	٠	ı	ı	٠	1	i	2.9	ı	1
7.0 30.	ı	•	ı	•	ļ	ı	٠	1	ı		ı	ı
7.0 35.	ı	•	ı	•	ı	ı	٠	ı	ı		1	ı
00.00	0.0		ı	•	ı	1	٠	ļ	,	ı	0.0	ı
100.0 70.0	1	0.0	ı	0.0	ı	1	0.0	ı	ı	1	2.7	ı
03.0 30.	1		ı	•	ı	1	•	ı	ı	0.0	ı	ı
03.0 35	ı	•	ı	•	1	1	•	1	1	13.9	ı	ı
	,	•	,	•	J	ı	•	1	ı	2.6	ı	ł
	l	•		•			•	1	1			١
07.0 32.	1	•	ł	•	ı	ı	٠	I	ı	6.3		l
10.0 32.	ı		ı	٠	1	ı	٠	ı	ı	ı	0.0	ı
10.0 55.	ı	٠	ı	٠	i	ı	•	ı	ı	1	٠	ı
13.0 30.	1	•	ł	•	ı	ı	•	1	1	2.2	ı	ı
15 0 25	1	•	ı	•	c	ı	•	1	ı	 	٠,	ł
10.0	l	٠					٠			c		
18.0 39.	1		ı	0.0	ı	ł	٠	I	ı	6.0	l	i
20.0 40.	ı	٠	ı	٠	ı	ı	٠	ı	ı	0.0	1 4	ł
30.0 30.	1	•	1	٠	ı	ı	•	ı	ı	ı	0.0	ı
				١								
				100	<i>sostens a</i>	aenigmaticus	cicus					! ! !
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
70.0 80.0	0.0	 	2.6		ı	ı		١	1	0.0	I	1
					Lal	Labridae						
								1			1 1 1 1 1 1 1	
Z	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
33.0 40	ı	0.0	1	0.0	ı	ł	i	1	1	3.0	ı	ı
40.0 45.	ı	•	1	•	ı	1	ı	i	ł	ı	2.8	ı
					Halichoeres		spp.					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
		1		1			1			0 6		
17.0 35.	I	•	I	•	ı	I	٠	I	1	0.0	:	
17.0 50.	ı	•	ı	•	ŀ	i	•	ı	ı	ى. م	1 1	1 1
20.0 30.	I	•	l	٠	ı	ı	٠	I	١	C • 7		I
20.0 45.	1	•	1	•	ļ	1 1	•	I (l I	¥ 1 ¥	0.7	1 1
23.0 37.	i	•	1	•	ı	1	•	ı	I	0,0	1 1	
23.0 42.	I 1	•	i 1	•	1 1	}	•	i 1	1 1	7.7	ı ı	· 1
127 0 50 0	l ł	0.0	l 1		1 1	l 1	, c	1 1	1 1	0.0	l i	
27.0 60.	i i	•	1 1	• •	l I	ı I		ı	ı	0.0	1	1
		•		•								

TABLE 4. (cont.)

	DEC.			DEC.		1 1	1	1 1	ı	1	1 1	ı	ı	: 1	ı	ı	ı	1 1	ı	ı		DEC.	1111	1 1	1	1 1	ı
	NOV.	5.8		NOV.	 - - - - - - - - - -	1 1) 1	1 1	ı	1 :	0.0	2.8	:	ì I	ı	10	0.0	1 1	1 0	0.0		NOV.	2.7	1 1	1	1 1	0.0
	oct.	12.8		OCT.	2.7	1 0	2.7	5.0	2.6	2.7	1 1	ı	0.0	0.0	2.6	8.6	1 0		0.0	ı		OCT.	3.0	2.8 0.0	\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	0.0) -
	SEP.	1 1 1		SEP.	1 1	1 1	1	i i	ı	1 1	1	1	L	1 1	ì	ı	ı	1 1	ı	I		SEP.	1111	1 1	1	LI	t
	AUG.	111		AUG.	1 1	2.5		1 1	1	1 1	1	0.0	1	l I	1	1	1 -	ìI	ı	I		AUG.	0.0	l l	ı	1 1	ı
cont.)	JULY	0.0	nica	JULY	1 1	: 1	0.0	0.0	0.0	0.0	1	1	2.0)))	0.0	0.0	2.4	2.7	18.1	6.7	purcher	JULY	0.0	0.0 2.4	0.0	2.5 0.0)))
spp. (cont.	JUNE	1 1 1	californica	JUNE	1 1	1 1	1	1 1	1	1 1	1	ı	1 1	1	1	ı	1 (1 1	ı	, ,	rnd snn	JUNE	1111	1 1	ì	1 1	1
Halichoeres	MAY	111	Oxyjulis o	MAY	1 1	1 1	1	1 1	1	1 1	ı	1	1 1	1	1	1	1 1	l 1	ı	1	Sellitossyphus	MAY	1 1 1 1	1 1	ı	1 1	1
Hali	APR.	0.00	Oxi	APR.	1 1	1 1	0.0	0.0	0.0	0.0	5.1	0.0	0.0					0.0	0.0		JULIA	APR.	0.00	0.0	0.0	0.0	0.0
	MAR.	111		MAR.	0.0	0)))	1 1	ı	1 1	1	1	1 1	1	ı	1	1 1	1 1	1	I		MAR.	0.00	l i	I	1 1	ı
	FEB.	0.00		FEB.	1 1	1 1	•	0.0			1		•		•				0.0			FEB.			•	0.0	
	JAN.	111		JAN.	0.0	0.0	•	1 1	ı		0.0	•	1 1	ŀ	ı	1	l 1	 	1			JAN.	0.00	I I	ı	1 1	1
	NC	30.0 35.0 25.0		NO	55.0 57.0	m 0			0.	3.5	<u>ښ</u>	0	٠ د	2 .	5.	·.		;;	2.		 	NO	51.0 60.0 65.0 60.0	· 0			5.
 	TAT	130.0 130.0 133.0		ATI	77			÷.	-:	: c		· .	~ ~		7	97.	7.0	17.	e .		1	ATI	77.0 80.0 90.0	17. 17.	23.		40.

TABLE 4. (cont.)

	DEC.	,	ı	1	t	ı	i	ı	i	ı	ı	ı	ı	ı	1	ı	ŀ	ı	ı	ı	ı	ı		DEC.		ı	ı	ı	í	ı	ł		DEC.	! ! ! !	ı	1	ı	ı	ı	1	ì	
	NOV.	1	1	ì	1	3.2	2.8	ı	ì	ı	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	1 -	0.0		NOV.		ı	ı	1	ı	ı	ı		NOV.		1	ł	1	ı	ı	1	ı	
	OCT.	2.7		1	5.4	ı	1	2.9	2.8	2.8	0.0	2.5	9.7	7.7	1.0	٠. د د	5.9	3.0	20.1	4.4	0.0	ı		OCT.	2.6	2.8	0.0	ı	0.0	0.0	2.9		OCT.		ı	2.9		0.0	0.0	5.7	2.6	
	SEP.	I	1	ı	ı	1	ı	ı	ı	ı	ı	I	1	ı	ı	1	ı	ı	ı	ı	i	1		SEP.	 	ı	ı	ı	ı	1	ı		SEP.	!	ı	ı	1	ı	i	ı	ı	
	AUG.	ı	55.7	7.1	1	t	ı	ı	ı	ı	1	ı	ı	ŀ	I	j	ı	ı	ı	ı	1	ı		AUG.	 	i	4.8	2.5	2.5	5.0	1		AUG.	2 7	2.0	4	2.5	0.0	0.0	1	ı	
nis	JULY	0	•	ı	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	121.3	2.9	i	JULY		ı	1	ì	ı	ı	0.0		JULY	 	1	ı	ł	ı	1	0.0	0.0	
Chromis punctipinnis	JUNE	1	ı	1	1	1	I	1	ı	l	ı	ı	I	1	1	ì	ł	ı	I	I	l	ı	brodiei	JUNE		1	ł	ŀ	1	ı	ı		JUNE	! - - - - - -	ı	l	1	1	ì	ı	ı	
omis pu	MAY		ı	ı	ı	ı	ı	1	ţ	ı	ι	ı	ı	ı	ı	ı	ı	1	1	1	ı	1	Номелла	MAY		1	ı	1	1	ı	ı	Brama	MAY		ı	1	ı	ı	ı	ı	ı	
Chr	APR.			1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	H	APR.		1	0.0	1	0.0	0.0	0.0		APR.		ı	0	· ·	2.9	5.5	0.0	0.0	
	MAR.		ı	ı	ı	1	i	ı	ı	1	ı	1	ı	1	ı	I	ı	ı	1	ı	1	I		 MAR.	0.0	0.0		ı	1	ı	ı				ı	ı	ŀ	ı	ı	1	ı	
	FEB.		•	ı	0.0		0.0	•	•	•	•	٠	٠	٠	٠	•	٠	•	•	•	•	•		FEB.	 	1	ı	1	ı	t	0.0		FEB.		ı	1	ı	ŀ	ı		0.0	
	JAN.	 	i	ı	ı	0.0	ı	1	ı	ı	ı	ı	ı	ı	ı	1	•	1	1	1	1	ı		JAN.	1 4		0.0	•		0.0			JAN.		ı		٠		0.0	•	1	
	STATION	02 0 47	30.0	0.0	93.0 28.0	00.00	0.0 35.	07.0 32.	07.0 45.	13.0 40.	13.0 45.	13.0 50.	13.0 65.	13.0 90.	1/.0 26.	17.0 40.	17.0 45.	17.0 50.	18.0 39.	23.0 37.	23.0 42.	30.0 35.		STATION	100	0.0 180.	0.0 120.	0.0 130.	90.0 140.0	0.0 160.	3.0 100.		STATION	750	0.0	0.0	0.0	0.0 160.	90.0 200.0	3.0 100.	7.0 90.	

TABLE 4. (cont.)

	DBC.	111111	DBC.		DEC.	
	NOV.	8	NOV.		NOV.	0.0 0.0 0.0 0.0
	OCT.	7 2 2 2 2 2 2 2 3 8 8 8 2 2 3 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	OCT.		OCT.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
	SEP.	1 1 1 1 1 1 1	SEP.		SEP.	SEP
	AUG.	111111	AUG.		AUG.	Aug.
t.)	JULY	20.00	JULY	i	JULY	1.00 2.6 2.6 2.6 2.6 2.6 2.7 2.9 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0
Brama spp. (cont.)	JUNE		JUNE	lalandi	JUNE	symmetricus 50.5 25.5 25.6 27.7 77.7
rama sp	MAY	Cara	MAY	Seriola	MAY	2
B	APR.	000000	APR.	•1	APR.	Trac APR.
	MAR.	111111	MAR.		MAR.	MAR. 14.5 28.8 28.3 1.0
	FEB.	00 0000	FEB.		FEB.	FEB.
	JAN.	111111	JAN.		JAN.	
	STATION	100.0 100.0 100.0 120.0 100.0 140.0 107.0 65.0 107.0 70.0 113.0 80.0	STATION 133.0 25.0		STATION	110.0 80.0 118.0 39.0 123.0 42.0 123.0 50.0 127.0 45.0 127.0 65.0 127.0 65.0 127.0 70.0 130.0 35.0 137.0 70.0 137.0 70.0 137.0 70.0 80.0 53.0 80.0 53.0 83.0 43.0 83.0 65.0 60.0 160.0 70.0 120.0 83.0 43.0 83.0 70.0 83.0 70.0

TABLE 4. (cont.)

DEC.		111
NOV.	000000000000000000000000000000000000000	
OCT.	0.0000000000000000000000000000000000000	
SEP.		1111
AUG.	7	111
JULY	2000 1000	27.7. 2.0.3.
Synume CIICUS AY JUNE		1 1 1 1
us symm MAY		1 1 1 1
Trachurus 	111 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
MAR.		1 1 1 1
FEB.	101111111000000000000000000000000000000	
JAN.		
NO	20000000000000000000000000000000000000	0000
STATIC		033.

_
cont.)
symmetricus (
<i>Trachurus</i>

DEC.		
NOV.	000000000000000000000000000000000000000	
OCT.		
SEP.		
AUG.		
JULY	10000000000000000000000000000000000000	
JUNE		
MAY		
APR.	2000 2000 3000 3000 3000 3000 3000 3000	•
MAR.	, , , , , , , , , , , , , , , , , , ,	
FEB.	2 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	•
JAN.		
NC	255 255 255 255 255 255 255 255	•
STATION	10000000000000000000000000000000000000	

TABLE 4. (cont.)

			•	Trachurus symmetricus	ns symm	etricus	(cont.	()				
TAT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0 55.		į -	 	0.0	ı	1		1	ı	1		ı
20.0 60.	1		ı	2.5	I	1		ŧ	1	ı		ı
20.0 65.	į		ı	2.6	1	ı	5.1	I	I	ı	•	ı
20.0 70.	1	5.	ı	5.5	ı	1		1	ŀ	I		ı
20.0 80.	ı		I	5.3	ı	1	0.0	ı	ı	I	0.0	ı
20.0 90.	ı	2.	ı	0.0	ı	ı	•	I	I	ł	•	ı
20.0 100.	ı	•	ì	•	ı	ı	1	I	1	i	•	i
20.0 120.	i	0	ı	•	ı	ı	ŧ	ı	t	1 1	•	1
23.0 37.	1	•	ı	0.0	ı	1	4.3	ı	ı	0.0	ı	I
23.0 42.	ł	•	1		ı	ı	69.7	ı	ı	٠	ł	I
23.0 45.	1	•	i	•	ı	ı		ı	1	0.0	ł	ı
23.0 50.	ı	•	I		ł	ı	٠	ı	ı		ı	í
23.0 60.	ı	٠	I	•	ı	ı	•	I	I	٠	ı	ı
23.0 65.	ı	٠	I	•	ı	ı	٠	I	ı	٠	ı	ı
27.0 40.	ł	•	ı	•	ı	ı	٠	i	ı	٠	ı	l
27.0 45.	I	•	i	•	ı	ı	•	ı	ı	•	I	ı
27.0 50.	ı	•	i	•	ı	t	•	!	i	٠	1	ı
27.0 80.	I	•	ı		ı	ı	•	1	ı	٠		I
30.	ı	2.7	I	0.0	i	ì	0.0	I	I	ı	0.0	ı
30.0 35.	1	٠	I	0	ı	ì	•	I	ı	ı	٠	i
30.0 45.	ı	•	ı	•	ı	ı	٠	ı	I	ı	•	l
30.0 55.	ı	٠	I	٠	i	I	•	ı	I	ı	•	l 1
30.0 100.	ı	•	ł	0.0	i	ı	ı	ı	I		•	l I
33.0 25.	ı	•	1	18.5	í	1	ł	ı	I	0.0	l	ı
				CO	Coryphaena	a hippurus	rus					
A	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
20.0 25.						i 	١ .	 	 	0.0	1	ı
20.0 45.	ı		1		ì	I		ı	ı	ı	0.0	ı
20.0 50.	ı		ŀ		ı	ı	•	i	ı	1	0.0	ı
123.0 37.0	ı	4.7	t	0.0	ı	ı	0.0	ı	1	0.0	1 0	ı
30.0 90.	1	•	ı	•	ı	ı	٠	ŀ	ı	ı	0.0	i
40.0 30.	ı	•	ı	•	I	ı	1	ı	ı	I		ı
					Ger	Gerreidae						
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
03.0 30.				0.0			0.0			7.2		
140.0 30.0	ı	0.0	1	0.0	1	ı	ì	ı	ı	1	2.7	!

TABLE 4. (cont.)

						Наег	Haemulidae						
STATION	! ! ! !	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	oct.	NOV.	DEC.
120.0 4	0.0	ı	0.0	ı	0.0	١	ı	16.9	١		0.0	i 	
					S	Girella	nigricans	sus					
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
103.0 6	0.0		0.0	1	0.0	1	1	2.7	1		0.0		
		!	:	!	Media	luna c	Medialuna californiensis	iensis					
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
000	02	1 1	0.0	 	0.0	 		2.7		 		0.0	1 1 1
0.00	0	1	•	ı	0.0	1	ł	2.4.	ł	ı	ı	0.0	ı
03.0	'n	1 F		1 1	0.0	1 1	1 1	2.6	1 1	i i	0.0	0 1	1 1
03.0	0	ŀ	•	ı	0.0	ı	1	5.7	ı	ì	0.0	ı	ı
07.0	00	1 1	•	1 1	0.0	1 1	1 1	4 r	1 1	1 1	0.0	1 1	1 1
10.0		ı	• •	ı	0.0	I	ı	2.5	ı	1) 	0.0	ı
20.0 23.0	25.	1 1		1 1	0.0	1 1	1 1	5.3 10.3	ΙI	1 1	0.0	0.0	1 1
					Can	lolatil	Caulolatilus princeps	ceps					
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
107.0 3 107.0 4 117.0 6	5.0	111	000	111	000	1	 1 	2.8	1 1 1	111	0.00	111	111
						Scia	Sciaenidae						
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
60.09	2:	2.0	I	0.0	l	1	l		 		0.0	1.	1
0.0			1		1	1	1	1	l I	1	0.0	1	1
7.0	-	6	t	16.7	i	1	1	1	1	1	0.0	ı	1
0.0	N	•		0.1	2.9	1 1	1 1	0.0	1 1	ŀ	0.0	1 1	1 1
7.0	50	1 1	0.0	! !	2.4	1 1	1 1	000	1 1	! !	2.7	1 1	1 1
90.02	000	0.0		1 1	44.4	1 1	F I	0.0	5.5	1 1	0.0	0.0	1 1

TABLE 4. (cont.)

Sciaenidae (cont.)

1	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
1000		١,	 - - - - -			 		ı	ł	16.1	i	ı
7.0 30.7) V	ı		ı	1		1	ı	0.0	1	ł
7.00		•	1		ı	ı		ı	ı) } }	0	ŀ
00.0 30.			I			!		1	ı	c		١
03.0 30.		O	ı	0.0	l	1		ı f	ı		ı	١
07.0 32.		٠	Į	0.0	ı	ı				•	ı	,
07.0 35.		•	1	3.1	ŀ	ŀ		I	I		1	
13.0 40.		٠	1	6.2	ı	ı		ì	í	0.0	1	I
13.0 45.		٠	ł	3.0	1	ı		ı	ı	0.0	1	l
17.0 40.		•	ı	0.0	1	i		ı	ı	0.0	ı	ı
18.0 39.		•	ı	0.0	1	ı		ı	1	0.0	I	ı
20.0 25.		•	1	0.0	ı	1		ı	i	0.0	ı	ı
20.0 30.		2	ı	0.0	ı	ı		١	ł	2.5	ı	ı
120.0 35.0	١	0.0	1	0.0	ı	ŀ	0 0	1	ı	2.6	ı	ı
20.0 40.		•	t	1.9	ŧ	ı		1	ı	0.0	ı	1
20.0			ı	0.0	ı	ı		1	ì	ı	0.0	ł
23 0 37			ŀ	0.0	1	1		ı	1	4.4	ı	ı
22.0		•	ı		1	ı		1	1	0.0	1	ı
22.0 42.		•	ı		1	ı		1	1	0.0	1	ı
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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AUG.	111	1 1 1	1 1 1	1 1 1	1 1	1 1	1 1	1 1	1 1		AUG.		3 1 1 1 1	AUG.	0.
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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17.0 55.	1		ı	•	1	ı		i	i	•	ı	ı
17.0 65.	1		ı	•	ı	i		ţ	i	•	ı	i
17.0 90.	ı		ı	•	ı	1	2.4	ł	ı	•	ı	ì
20.0 90.	ì		ı	•	ı	ı	2.4	ı	ŀ	ı	2.6	ı
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TABLE 4. (cont.)

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Citharichthys spp. (cont.) 30.00 30

TABLE 4. (cont.)

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111.2 22.6 1.1.2 2.2.6 1.1.3 1.1.3 Citharichthys stigmaeus

TABLE 4. (cont.)

STANTION 13.N. FEB. MAR. APR. MAY JUNE JULY ALG. SEP. OCT. 93.0 70.0							1111111		1111111				
90.0	NOL	AN	EB	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
80.0	70.	1	•	1	0.0	1	1	5.4	ı	1		1	1
32.0	0 80.	ı	•	1	0.0	I	I	0.0	1	1		ı	ı
132.0	30.	ı	٠	ı	0.0	1	1	0.0	ı	ı		ı	1
45.0	0 32.	1	•	1	0.0	1	1	1 .	ı	ı	•	ı	i
95.0 95.0	0 40.	I	•	I	0.0	ı	ŀ	4 ,0	ı	ı		I	ı
250.0 250.0	0 45.	I	•	I	3.2	ı	ı		1	ı		ı	ı
35.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0 50.			ı	0.0	ı	ı		ı	1	5.6		i
95.0 95.0	0 30.	• •		ı	0.0	ı	ı		ŀ	ı	ì	•	ı
40.0	0 35.		•	ŀ	0.0	i	ı		ı	1	ı		1
65.0	0 40.	1	•	١	0.0	1	ı		1	ŀ	1	3.0	1
70.0	0 65.	ı	•	ı		I	1	•	ı	ı	ı	•	1
35.0	0 70.	1	•	I		ı	1		ì	I	ı		ı
45.0 - 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0	0 35.	1	•	ł		1	1	4	i	ı		ı	ı
45.0 - 0.0 0 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0	0 40.	ł	•	1	•	ł	1		1	1		ı	ı
50.0 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0 45.	ì	•	1	•	ı	ı		ı	ı		ı	ı
35.0	0 60.	1		1		ı	1		1	1		1	1
35.0	0 32.	1		1		ı	1		1	ı		1	ì
46.0	0 35.	1		ł		ı	ł		1	ı		1	1
45.0 - 0.0 0.0 - 0.0 0.0 - 0.0 0.0 0.0 0.0	0 40.	1		1		1	1		1	ı		ı	1
65.0 $\frac{65.0}{10.0}$ $\frac{65.0}$	0 45.	1	•	ı		ł	1		1	1		ı	ı
70.0	0 65.	ı	•	1		ı	1		ı	1		1	1
32.0 0.0 - 0.0 0.0 0.0 0.0 - 0.0 0.0 - 0.0	0 70.	ı		ı		ı	1		1	ı		ı	ı
45.0 - 0.0 - 0.0 - 0.0 0.0 0.0 0.0 - 0.0	0 32.	i		1		1	i		ı	ı	ı	1.5	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 45.	1	•	1		ı	1		ı	ı	ı	2.7	ı
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 65.	ì	•	i	•	1	t	•	ı	ı		0.0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 40.	ŀ		ŧ	•	ŀ	ı		ı	ı	•	ı	ı
39.0 - 0.0 -	0 40.	ı		ı	•	ı	ŀ		ı	ı	•	ı	ı
42.0 - 0.0 - 5.4 0.0 - 0.	0 39.	ı	•	ı	•	ì	ı		1	t		1	1
45.0 - 0.0 - 5.4 0.0 - 0.	0 42.	ı	•	ı		1	1		1	ı	•	1	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 45.	ı		1	5.4	ł	ı	•	ı	1		i	I
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 34.	ì		I	0.0	ı	ı	4	ı	1		1	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 50.	ı	•	1	5.9	ŀ	I		ı	I		ı	١
ON JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. 51.0 0.0 <t< td=""><td>0 45.</td><td>I</td><td>•</td><td>ı</td><td>2.7</td><td>ı</td><td>i</td><td>ı</td><td>ı</td><td>t</td><td>•</td><td>ı</td><td>ı</td></t<>	0 45.	I	•	ı	2.7	ı	i	ı	ı	t	•	ı	ı
ON JAN. FEB. MAR. APR. MAY JULY AUG. SEP. 51.0 - 0.0 - 0.0 - - 0.0 - - - 0.0 - - - 0.0 - - - 0.0 - - - 0.0 - - - 0.0 - <t< td=""><td></td><td></td><td></td><td></td><td>Hip</td><td>ssolboa</td><td></td><td>mata</td><td></td><td></td><td></td><td></td><td></td></t<>					Hip	ssolboa		mata					
0 55.0	NOI	JAN.	EB	MAR.		MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 51. 0 55.	! ! ! ! ! ! !		 		1 1 1 1	1 1 1 1 1 1 1 1		1 	I I I I I I I	2.6	 	
0 25.0 - 0.0 - 0.0 - 6.3 0.0 0 0 0.0 0.0 0	0 26.	ı	•	ı	•	10	ı	0.0	I	ı	0.0	1 6	ı
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 25.	l j		1 1	0,0	0.1	1 1	4.1	1 1	I I	0.0	0.2	l I
$egin{array}{cccccccccccccccccccccccccccccccccccc$	0 40.	I		ı	0.0	ı	1	1.9	ı	1	1.9	ı	ı
	0 37.	ı	•	I	0.0	ı	ı	2.2	ı	1	0.0	1	ı
	.00 0	I	•	ı	0.0	I	I	6.2	ı	I	٥.	i	I

TABLE 4. (cont.)

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 	NOV.	i	0.0	0.0) • • I	0	•		NOV.	ì	1 4	0.0	i	1 1	. 1	c			ı	ì	0.0		ı	ı	0.0	ı	ı	ı	1 9	0.0	0.1	-	000	1		1	NOV.	ı	ı	1 0	•
	OCT.	0.0)))	ı	7 5	, ,			oc.r.	0.0	2.5	10	0.0	0.0	•	0.1	i 1	c 1 C) • 1	1	0.0	0.0	1	0.0	0.0	0.0	0.0	ı	c 1 C		1	0.0	1		OCT.	2.0	2.2	0.0	ł
	SEP.	1	1	ı	ı	ı I		 	SEP.	ı	ı	ı	ı	1 1	ł	l 1	1	1 1	l	l I	ì	1	ı	1	ı	1	i	ı	ı	1	I	I	1 1	ı			SEP.	١	ı	ı	ı
·	AUG.	ı	ı	ł	ł	l I		ì	AUG.	ı	1	0.0	i	į	i	ı	ı	ı	ì	1 1	ı	ı	i	ŧ	ł	1	1	I	ı	ı	I	I	l 1	1			AUG.	l	ł	ı	i
(cont.)	JULY	α •	•	•	•	ı	l	rnicus	JULY	2.5	•	1 4	0.0	0.0	0.0	1 0	0.0	0.0	0.0		9							•	•	•	•	•	32.0	0		pis	JULY	0.0	0.0	2.7	7.7
stomata	JUNE				l	ı	ı	californicus	JUNE		1	1	ı	ı	ı	I	ı	ı	ı	ł I	. 1	1	1	1	ı	ı	ı	ı	ı	ı	ı	ı	I I	1		s liolepis	JUNE		1	1	ì
	MAY		i 1	1 -	ı	I	ı	Paralichthys	MAY	 	ı	ı	ı	ı	ı	ı	ı	ı	ı	Į.	1 1	ı 1	ı	1	4.7	ı	ı	ı	1	I	I	ı	ı			Xystreurys	MAY		ı	1 (0.0
Hippoglossina	APR.	!	•	•	•	0.0	•	Parali	APR.	0.0	0.0	7.6	10.4	2.9	15.4	0.0	0.0	0.0	2.2	m, c	7.	7.7		2.8		0.0	0.0	0.0	3.8	5.1	2.5	0.0	0.0		0.7	Xy	APR.	1	0.0	•	1
H	MAR.	! ! !	ı	i	1	I	ł		MAR.		1	1	ı	i	i	١	i	ı	ı	ı	I	1 1	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	i	ı	ı		MAR.		1	i	ı
	FEB.	1	•	•	٠	0.0	٠		FEB.	ı	0.0			0.0	٠				•	8.5	•						•		•	•	•	•	0.0	•	•		FEB.	1	0.0	•	•
	JAN.		i	I	ı	ı	ı		JAN.		ı	0.0		1	ı		5.6	ŀ	1	1	ł	ı)	ı I	ı	ì	1	1	1	ı	ı	ı	1	I	l		JAN.		i i	I	1
			٠.	٠.	ŝ	25.0	÷.			10			8	0	0	2	0	5.	0	5	· 0	· ·	n c		·		Ċ	5	0	0	5.	7.	30.0	٠	'n		 	1	30.0	9	3
			27.	30.	30.	133.0	37.		STATION				3	ش	7	7.	00.	00.	03.	07.	07.	10.	10.	13.	. 0	20.	20.	$\frac{2}{20}$.	20.	20.	20.	23.	130.0	30.	33.		STATION	1,	$\frac{9}{113.0}$	ω.	19.

TABLE 4. (cont.)

				Xystre	urys I	Xystreurys liolepis	(cont.					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
25.	1		ı	0.0	ı	i	2.1	ı	,	0.0		
30.	I	•	ı	2.5	1	ı	0.0	ı	ı	0.0	ı	ı
35.	ı	٠	i	0.0	ı	ì	4.4	I	ı	0.0	ı	ı
123.0 37.0	1 1	2.3	1 1	0.0	1 1	1-1	0.0	1 1	1 1	0.0	t i	1 1
9		•		•						•		
 	 		 	rebi	Lepidopsetta	J	bilineata	1	† † 	 	 	
TAT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
	1	0.0	l	2.9	ı	ı	0.0	ı	ı	0.0	ł	1
				I	Lyopsetta	exil	is					
TI	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
60.0 52.	2.	 	30.3							0.0		
0.0 55.	•	ı	21.6	1	1	ı	1	1	1	0.0	1	1
$\frac{3.0}{55}$.	0.0	ı	9.5	ı	I	ı	ı	ı	ı	0.0	I	ı
7.0 50.	•	ı	19.8	ł	I	ı	I	I	ı	0.0	ı	ı
0.0 53.	٠	ı	10.6	ı	ı	ı	1	ı	ı	0.0	ı	ł
3.0 53.	٠	ı	0.0	ı	ı	ı	ł	ı	ı	0.0	l	ł
7.0 51.	•	I).).	i	ŀ	ì	1	ì	ι	0.0	ı	I
0.0	•	1 1	7.0	ł I	l I	1 1	l I	i I	i I	0.0	1 (; ;
200			0.0	a 1 C	1 1	1 1	c 1 c	1 1) 1	c 1 C	1 1	1 1
3.0	. 1		ı I	, r.	i !	ı ı	0.0	 	i 1		1	1
3.0 65.	ı	• •	ı	, C	ı	1	• 1	ı	ı		ı	1
3.0 70.	ı		ſ	2.9	1	1		ı	1	0.0	1	1
7.0 40.	1		ı	3.1	ı	ı	2.9	ı	1	0.0	1	ı
0.0 28.	0.0		ı	3.2	1	ŀ		0.0	1	ı	0.0	ł
0.0 32.	٠	ı	ı	5.6	ı	ı	ı	I	I	1	0.0	i
0.0 53.	•		ı	2.5	ı	ı	1	ı	ı	[(0.0	ŀ
3.0 28.	I		ı	2.6	ı	ι		i	ı	0.0	ı	ı
7.0 30.	i	٠	ı	0.0	ł	ı	•	ı	ı	0.0	ì	I
97.0 35.			I	3.2	1	1	٠	ı	ı	0.0	1 4	i
00.0	0.0		ı	11.4	ı	1	•	ı	ı	1 0	0.0	i
02.0 30.	1	•	1 1	7.7	1 1	l I	•	ıı	I I		1	ı ı
13.0 40.	ı		ı	2.9	ı	1		ı	ı		1	ł
17.0 35.	1		I	2.7	ı	ı		ı	ı	0.0	ı	ì
18.0 39.	ı		1	2.7	i	ı	•	1	ı	0.0	i	ı
120.0 50.0	1	0.0	ı	2.5	ı	ı	0.0	ı	1	1 0	0.0	1
23.0 37.	ı		ı	7.7	1	ı	•	i	ı	0.0	ı	ı

TABLE 4. (cont.)

1	DEC.		DEC.	1 1 3		DEC.	1 1
	NOV.	00.001111111111111111111111111111111111	NOV.	1 1 1	1	NOV.	0.0
	OCT.		OCT.	0.0		OCT.	1 1
	SEP.		SEP.	111		SEP.	1-1
1	AUG.		AUG.	2.7		AUG.	0.0
sn	JULY	Sp 000000000000000000000000000000000000	JULY	0.0	coenosus	JULY	1 1
Parophrys vetulus	JUNE		JUNE	i - - - - - -	hys coe	JUNE	1 1
arophry	MAY		MAY	 	Pleuronichthys	MAY	1 1
P	APR.	26.1 13.1 13.1 13.1 13.1 13.1 13.1 13.1 1	APR.	3.2	Pleu	APR.	3.1
	MAR.	\$6000000000000000000000000000000000000		0.0		MAR.	! ! !
	FEB.	700000000000000000000000000000000000000	FEB.	0.0		FEB.	11
	JAN.	0004811111001111111	JAN.	0.0		JAN.	2.8
	Z	55.0 55.0	NC	60.0 35.0 37.0	 	NC	55.0
	STATION	60.0 60.0 70.0 70.0 882.0 883.0 883.0 893.0 997.0 997.0 997.0 100.0 100.0 100.0 100.0 100.0 100.0	STATION	80.0 97.0 123.0	1		70.0

TABLE 4. (cont.)

	DEC.	+ 1 1 1		DEC.	1 1		DEC.	1	ı	1 1	ı	ı	1 1	ı	ı	1 1	ì	ı	1	l I	i	ı	ı	l I	1 1	ı	1	1	1 1	ı ı	ı
	NOV.	0.0		NOV.	1 1		NOV.	1	ı	1 1	0.0	0.0	1 1	ı	1 4	0.0	ı	ı	1 -	1 1	ı	ι	1 9	0.0	l 1	i	ı	0.0	o. 1	1	ı
	OCT.	7.7 3.0 2.8		ocr.	2.2		OCT.	0.0	0.0	000)	1	2°6 4°0	0.0	0.0	1 0	0.0	0.0	10		0.0	0.0	2.9	1 0	0.0	6.5	0.0	I	c ۱	0.0	0.0
	SEP.	1111		SEP.	1 1		SEP.	1	ł	1 1	1	1	1 1	ì	ł	1 1	t	ı	1	l i	1	I	ı	1 1)	1	1	ı	1 1	1 1	1
	AUG.	0.0111		AUG.	1 1		AUG.	ı	ı	1 1	5.5	ı) [ı	1	1 1	1	ı	I	1 1	ı	ı	I	1 1	I I	1	1	1	1 1	l F	ı
rrens	JULY	0.0	teri	JULY	0.0	icalis	JULY	0.0	2.5	00		ı	0.0	•	0.0	2.5 ¤	2.0	0.0	10		0.0	5.0	0.0	7.7.	2.01	. 8	3.8	2.6). (0.0	4.6
Pleuronichthys decurrens	JUNE	1111	Pleuronichthys ritteri	JUNE	1 1	ys vert	APR. MAY JUNE JULY	,	ı	1 1	ı	ı	1 1	1	ı		ı	1	ı	1 1	1	ı	l	i 1	ı 1	ı	1	1	i 1	I 1	ı
onichtl	MAY	1111	ronich	MAY	1 1	onichth	MAY		1	1 1	ı	ı	1 1	ı	ı	1 1	1	ì	ı	1 1	t	ı	1 0	0.0	ll	1	1	1		1 1	ı
Pleur	APR.	0.0 2.6 0.0	Pleu	APR.	2.3	Pleuro	APR.	0.9	0.0	3.8	0.0	5.6	0 %	0.0	3.2	0.0	0.0	6.2	1 0	0.0	2.3	0.0	0.0	ונר	13.9	0.0	3.8	0.0	2.0	11.2	0.0
	MAR.	0.0		MAR.	} 1		MAR.		i	FI	ı	ŀ	1 1	i	ı	H	1	ı	ı	1 1	1	1	ı	I I	l 1	1	i	1	1 1	1 1	ı
	FEB.	0.0		FEB.	0.0		FEB.	•	•	000	•		0.0	• •	٠			•	٠	•	• •	•	•	•	•		•	٠	0.0	•	• •
	JAN.	0.0		JAN.	1 1		JAN.	1	1	i i	0.0	•	1 1	ı		0.0	ł	ı	i	1 1	ı	ı	1	1	1 1	ı	1	1	1 1	1 }	1
	STATION	80.0 60.0 87.0 45.0 90.0 32.0 103.0 35.0		STATION	120.0 25.0 120.0 40.0		STATION	82.0 47.	3.0 40.	3.0 43.	0.0 28.	0.0 32.	93.0 35.0	7.0 32.	97.0 35.	30.0	07.0 32.	07.0 35.	10.0 33.	13.0 30.	17.0 30.	17.0 35.	18.0 39.	19.0 33.	20.0 23.	20.0 35.	20.0 40.	20.0 45.	20.0 50.	23.0 55.	27.0 34.

TABLE 4. (cont.)

 	DEC.		l I		I	ı		DEC.			DEC.	1	i	ı	1 1		1 1	1	ı	ı	ı	j l	1 1	i i	1	i	i	ı	i	t	ı	1 1	1	ì	ı	ì	ı	1	ì
 	NOV.		ı 1	1	ł	I		NOV.	 		NOV.	١	1	ı	1		1 1	ì	ı	1	i	1	I 1	c 1 C	•	ı	i	ı	ł	I	i	1	1	١	1	ì	167.6	73.8	2.7
	OCT.	i '	•	•	•	•		OCT.	0.0		OCT.	5.5	5.6	3.1	2.7	1 (2 5	3.0	3.0			. · ·				0.0		•	•	•	9				• •	2.5	1	ı	ı
	SEP.		I	I	ł	i		SEP.			SEP.		i	i	i	ţ	i I	1	1	ì	i	ı	ł	l i	ı	l	ı	ì	ł	ı	ı	I	1 1	ı	I I	1	I	ı	ì
(cont.)	AUG.		ı	ţ	i	I		AUG.			AUG.	 	ı	ı	1 (6.7	l I	ı	ı	ι	ı	ł	I	1 1	ı	ı	ı	ı	ŀ	1	ı	ı	1 1		1 1	ı	ŀ	I	1
	JULY	į į	2.5	6.2	5.7	I	stictus	JULY		•	JULY		0.0		0.0	1 (0.0		0.0	0.0	2.4	0.0	0.0	7.7		4.4	0.0						0.0	7.0	7.0	0.0	0.0	0.0	0.0
Pleuronichthys verticalis	JUNE		1	ı	ì	ı	melanostictus	JUNE	1	ırus spp	JUNE	1	ı	1	1	ł	1 1	١	1	ı	ı	i	ı	i	1	1	1	i	1	ŀ	ı	I	i I	I	1 1	l t	ı	1	ì
hthys v	MAY	 - - - -	I	i	ı	ı	Psettichthys	MAY	1	Symphurus	MAY	 	ı	ı	ı	ı	1 1	1	ı ı	ı	ı	ı	1	1 6	0.1	ı	ı	ı	ı	ı	1	ı	I	ı	1 1	1	1	1	I
uronic	APR.	i 	0.0	0.0	0.0	5.3	Psetti	APR.			APR.		0.0	0.0	0.0	1	0.0		0.0	0.0	0.0			0.0	د ۱ د	000	0.0	0.0							0.0			0.0	0.0
Ple	MAR.		1	1	ı	ı		MAR.	0.0		MAR.	0.0	· ·	1	ı	ì	1 1	- 1	1 1	ł	1	!	ı	ı	1	I	i	, I	ı	1	ı	ı	I	I	ı	1 1	ı	ì	Ι,
	FEB.	1	0.0	•	•	•		FEB.			FEB.			0.0			0.0																						
	JAN.		ı	ı	J	1		JAN.	6.6		JAN.	0 0		i	ì	ı	1	l 1	1 1	1	ı	ı	1	I	I	ı I	1	ı	t	1	ı	ł	I	1	ŀ	1 1	 	ı	ı
	Z	1	40.0	0	5.	5.		Ž	52.0		NO	1 6	· -	· ·		0	45.0	n u	o ro	, ru	0	5.	0	6	÷.	ی د	7	0	5.	0	0	4.	٠.	0	· 0		· -		0.
	STATION	1		27.	27.	33.		STATION	0.09		STATIO	1 6	٠,			0	97.0	200	٠.	17.	17.	17.	17.	18.	19	20.	23.	23.	23.	23.	23.	27.	27.	27.	27.		30.	30.	30.

TABLE 4. (cont.)

Z										
ATION AT	EB. MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
ATION ATION ACCOUNTY AC			ı	١	0	ı	ı	ı	0	1
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Disintegrated fish larva (cont.)

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TABLE 4. (cont.)

Disintegrated fish larva (cont.)

NOV. OCT SEP AUG. JUNE 7.77 FEB. JAN. STATION 107.0

TABLE 4. (cont.)

Disintegrated fish larva (cont.)

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TABLE 4. (cont.)

Unidentified fish larva (cont.)

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TABLE 4. (cont.)

Unidentified fish larva (cont.)

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TABLE 4. (cont.)

Unidentified fish larva (cont.)	JULY AUG. SEP. OCT. NOV. DEC.	0	٣	9				7	0	0	0	7	0
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fied fi	MAY		1	1	1	ı	1	ı	1	ı	t	ı	ı
nidenti	APR.	3.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	2.8	5.0	5.6
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	Z	50.0	80.0	0.06	25.0	35.0	70.0	23.0	30.0	45.0	50.0	30.0	45.0
	STATION	130.0	130.0	130.0	133.0	133.0	133.0	137.0	137.0	137.0	137.0	140.0	140.0

Summary of pooled occurrences of all larval fish taxa taken on CalCOFI surveys from 1961 to 1969. Taxa are listed in the same order as Table 4. TABLE 5.

NAME	1961	1962	1963	1964	1965	1966	1967	1968	1969
Anguilliformes Btrumeus acuminatus Opisthonema spp. Sardinops sagax Rnsenias sialis Argentina sialis Anicrostoma Microstoma Nansenia candida Nansenia crassa Bathylagus spp. Bathylagus milleri Bathylagus milleri Bathylagus pacificus Bathylagus pacificus Bathylagus pacificus Bathylagus pacificus Bathylagus pacificus Bathylagus vesethi Leuroglossus stilbius Dolichopteryx spp. Macropinna microstoma Cycnopinna microstoma Cycnotomatidae Stomiiformes Gonostomatidae Stomiiformes Gonostomatidae Cyclothone spp. Diplophos taenia Ichthyococcus spp. Vinciguerria lucetia Vinciguerria lucetia Vinciguerria poweriae Woodsia nonsuchae Sternoptychidae Astronestos spp. Chthyococcus spp. Vinciguerria poweriae Nodsia nonsuchae Sternoptychidae Astronectes spp. Bathophilus spp. Bathophilus spp. Tactostoma macropus Stomias atriventer Evermannellidae Photonectes spp. Tactostoma macropus Stomias atriventer Evermannellidae Paralepis risso Paralepis risso Paralepis risso Paralepis atlantica Stemonosudis macrura Sudis atrox Allopus spp.	7	45.8 45.8 11.3 11.3 11.5 12.3 13.3 14.3 15.3 16.3 17.3 18.3 18.3 19.3	269 3 36 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	388 377 377 377 377 377 377 377		26 17 26 18 18 18 18 18 19 10 10 10 10 10 10 10 10 10 10	1131 120 120 121 121 123 136 136 137 137 138 139 139 139 139 139 139 139 139 139 139	101 101 101 100 100 100 100 100 100 100	13 88 87 98 98 98 98 98 98 98 98 98 98
Scopelarchidae	29	09	20	21	33	114	29	13	93

1969 329 1153 110 110 23 550 19 1155 10 10 390 556 1968 27 $\begin{array}{c} 11 \\ 109 \end{array}$ 1967 31 16 16 38 63 63 25 1 2 10 10 5 15 178 9 9 6 671 2 208 121 2 2 398 398 17 346 3302 187 62 46 523 54 546 420 990 -165 171 361 3 222 156 80 32 32 183 234 21 44 263 11 116 249 2 2 81 11 103 27 27 8 8 19 103 27 27 81 111 132 42 32 292 292 -116 140 35 290 290 1 5 49 49 11 11 1964 220 146 101 25 25 155 189 189 16 342 2 61 111 163 163 46 46 46 88 92 161 1963 179 128 46 50 50 199 120 22 22 50 186 451 29 29 29 41 27 27 23 31 78 111 41 1 6 35 3 3 15 61 228 1 179 962 151 157 157 139 139 139 139 134 141 82 160 19 165 177 77 53 188 13 13 154 29 59 2 54 102 94 20 20 4 27 39 39 46 247 152 1961 177 Symbolophorus californiensis Tarletonbeania crenularis Stenobrachius leucopsarus Diogenichthys spp. Diogenichthys atlanticus Diogenichtbys laternatus Protomyctophum thompsoni Ceratoscopelus townsendi Notoscopelus resplendens Protomyctophum crockeri Triphoturus nigrescens Brosmophycis marginata Notolychnus valdiviae Triphoturus mexicanus Gonichthys tenuiculus Hygophum reinhardtii Merluccius productus Lampanyctus regalis Centrobranchus spp. Myctophum nitidulum Microgadus proximus Lampanyctus ritteri Benthosema pterota Ophidion scrippsae Lampadena urophaos Hygophum atratum Trachipteridae Eutaenlophoridae Lampanyctus spp. Bregmaceros spp. TABLE 5. (cont.) *Electrona rissoi* Parvilux ingens Physiculus spp. Carapidae Chilara taylori Cololabis saira Porichthys spp Ceratioidei Hygophum spp. Ophidiiformes Hemiramphidae Diaphus spp. Synodus spp. Gobiesocidae Loweina rara Macrouridae Exocoet i dae Atherinidae Myctophidae NAME

TABLE 5. (cont.)

NAME	1961	1962	1963	1964	1965	1966	1967	1968	1969
Melamphaes spp. Poromitra spp. Scopeloberyx robustus Scopeloberyx robustus Scopelogadus bispinosus Macroramphosus gracilis Syngnathus spp. Agonidae Anoplopoma fimbria Cottidae Bexagrammidae Scorpaenichthys marmoratus Cyclopteridae Hexagrammidae Ophiodous pictus Zaniolepis spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Scorpaenia spp. Clinidae Gobiidae Icosteus aenigmaticus Labridae Gobiidae Icosteus aenigmaticus Labridae Hypsoblennius spp. Clinidae Gobiidae Icosteus senigmaticus Labridae Blandis californica Semicossyphus pulcher Pomacentridae Chromis punctipinnis Hypsypps rubicundus Mugil spp. Apogonidae Howella brodiei Brama spp. Carangidae Seriola lalandi Trachurus symmetricus Caristius macropus Caristius macropus Caristius macropus Caristius macropus Caristius macropus Gerreidae Haemulidae	1117 1188 111	106 106 342 344 345 346 347 347 347 347 347 347 347 347	13 10 10 10 10 10 10 10 10 10 10	11 2 2 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	151 32 133 133 144 101 101 101 101 101 101 101	340 60 60 115 60 1143 115 105 105 105 105 105 105 105 105 105	68 68 66 74 75 75 75 75 76 76 76 76 76 76 76 76 76 76 76 76 76	84 14 12 12 13 14 10 10 10 11 11 11 11 11 11 11 11 11 11	333 277 277 110 110 120 140 140 158 138 140 158 168 178 188 188 198 198 198 198 198 198 198 19
Cirella nigricans Medialuna californiensis Caulolatilus princeps Mullidae	ਹਿਵਾਵਾਂ।	11 8		ነ 4 W l	25.	22 5	1 1 6	-m	12 2 -

1965 147 59 342 65 44 107 1963 1962 221 97 15 37 1961 Citharichthys spp. Citharichthys stigmaeus Rippoglossina stomata Paralichthys californicus Pleuronichthys verticalis Pleuronichthys decurrens Xystreurys liolepis Glyptocephalus zachirus Pleuronichthys coenosus Hypsopsetta guttulata Lepidopsetta bilineata Pleuronichthys ritteri Microstomus pacificus Parophrys vetulus Platichthys stellatus ľcichthys lockingtoni Tetragonurus cuvieri Peprilus simillimus Pleuronichthys spp. Scomberomorus spp. Sphyraena argentea Scomber japonicus Pleuronect i formes Lyopsetta exilis Auxis spp. Sarda chiliensis FABLE 5. (cont.) Chiasmodontidae Syacium ovale Trichiuridae Bothus spp. Polynemidae Sciaenidae Gempylidae Scombridae Serranidae Sparidae Nome i dae NAME

29 68 3 74 74 131 131 52 74 74 74

171 83 83 81 81 33 33 33 33 33 172 52 88 80 111 111 111 110 138

542 485

223 147

184

Disintegrated fish larva Unidentified fish larva

Tetraodontidae

Psettichthys melanostictus

Symphurus spp.

195 72

1969

1968

1967

INDEX

This index lists taxa included in Table 4 with their page numbers.

	Page
Anguilliformes	51
Clupeiformes	
Clupeidae	
Etrumeus acuminatus	51
Sardinops sagax	51
Engraulidae	
Engraulis mordax	52
Salmoniformes	
Argentinidae	
Argentina sialis	57
Microstoma microstoma	58
Nansenia candida	58
Nansenia crassa	59
Bathylagidae	
Bathylagus spp	59
Bathylagus ochotensis	59
Bathylagus pacificus	60
Bathylagus wesethi	61
Leuroglossus stilbius	63
Stomiiformes	66
Gonostomatidae	67
Cyclothone spp	67
Diplophos taenia	70
Ichthyococcus spp	70
Vinciguerria lucetia	71
	74
Vinciguerria poweriae	75
Sternoptychidae	/5
Astronesthidae	7.0
	76
Chauliodontidae	7.0
Chauliodus macouni	76
Idiacanthidae	
Idiacanthus antrostomus	77
Malacosteidae	
Aristostomias scintillans	78
Melanostomiidae	
Bathophilus spp	78
Eustomias spp	78
Photonectes spp	79
Tactostoma macropus	79
Stomiidae	
Stomias atriventer	79
Myctophiformes	
Alepisauroidei	
Evermannellidae	80
Paralepididae	81

	Page
Lestidiops ringens	81
Notolepis risso	82
Stemonosudis macrura	82
Sudis atrox	83
Chloropthalmoidei	
Notosudidae	
Scopelosaurus spp	83
Scopelarchidae	83
Myctophoidei	
Myctophidae	84
Lampanyctinae	0.1
Ceratoscopelus townsendi	87
Diaphus spp	90
Lampadena urophaos	91
Lampanyctus spp	92
Lampanyotus regalis	94
Lampanyctus regalis	94
Lampanyctus ritteri	
Notolychnus valdiviae	97
Notoscopelus resplendens	97
Stenobrachius leucopsarus	98
Triphoturus mexicanus	101
Myctophinae	
Centrobranchus spp	105
Diogenichthys spp	105
Diogenichthys atlanticus	107
Diogenichthys laternatus	109
Electrona rissoi	111
Gonichthys tenuiculus	111
Hygophum spp	111
Hygophum atratum	111
Hygophum reinhardtii	112
Loweina rara	113
Myctophum nitidulum	113
Protomyctophum crockeri	114
Symbolophorus californiensis	118
Tarletonbeania crenularis	120
Synodontoidei	
Synodontidae	
Synodus spp	122
Gadiformes	122
Merlucciidae	
Merluccius productus	122
Moridae	122
	105
Physiculus spp	125
Macrouridae	126
Ophidiiformes	126
Bythitidae	
Brosmophycis marginata	126
Carapidae	126
Ophidiidae	
Chilara taylori	126
Ophidion scrippsae	127

	Page
Lophiiformes	
Ceratioidei	128
Beloniformes	
Scomberesocidae	
Cololabis saira	128
Lampriformes	120
Trachipteridae	128
Beryciformes	120
Melamphaidae	
Melamphaes spp	129
Poromitra spp	131
Scopeloberyx robustus	131
Scopelogadus bispinosus	132
Syngnathiformes	
Macroramphosidae	
Macroramphosus gracilis	132
Syngnathidae	
Syngnathus spp	133
Scorpaeniformes	
Cottoidei	
Agonidae	133
Cottidae	133
Scorpaenichthys marmoratus	133
Cyclopteridae	134
Hexagrammidae	134
Oxylebius pictus	134
Zaniolepis spp	134
Scorpaenoidei	
Scorpaenidae	134
Scorpaena spp	135
Sebastes spp	135
Sebastolobus spp	138
Triglidae	130
Prionotus spp	138
Perciformes	130
Blennioidei	
Blenniidae	
Hypsoblennius spp	120
	138
Clinidae	139
	r n
Gobiidae	139
Icosteoidei	
Icosteidae	
Icosteus aenigmaticus	140
Labroidei	
Labridae	140
Halichoeres spp	140
Oxyjulis californica	141
Semicossyphus pulcher	141
Pomacentridae	
Chromis punctipinnis	142
Percoidei	
Apogonidae	

	Page
Howella brodiei	142
Bramidae	
Brama spp	142
Carangidae	143
Seriola lalandi	143
Trachurus symmetricus	143
Coryphaenidae	
Coryphaena hippurus	146
Gerreidae	146
Haemulidae	147
Kyphosidae	
Girella nigricans	147
Medialuna californiensis	147
Malacanthidae	
Caulolatilus princeps	147
Sciaenidae	147
Serranidae	148
Scombroidei	
Gempylidae	148
Scombridae	
Sarda chiliensis	149
Scomber japonicus	149
Trichiuridae	150
Sphyraenoidei	100
Sphyraenidae Sphyraenidae	
Sphyraena argentea	150
Stromateoidei	150
Centrolophidae	
Icichthys lockingtoni	150
Stromateidae	150
Peprilus simillimus	151
metaganunida	151
Tetragonuridae	150
Tetragonurus cuvieri	152
Trachinoidei	
Chiasmodontidae	153
Pleuronectiformes	
Pleuronectoidei	
Paralichthyidae	
Citharichthys spp	154
Citharichthys stigmaeus	157
Hippoglossina stomata	158
Paralichthys californicus	159
Xystreurys liolepis	159
Pleuronectidae	
Lepidopsetta bilineata	160
Lyopsetta exilis	160
Parophrys vetulus	161
Pleuronichthys spp	161
Pleuronichthys coenosus	161
Pleuronichthys decurrens	162
Pleuronichthys ritteri	162

	Page
Pleuronichthys verticalis	162
Psettichthys melanostictus	
Soleoidei	
Cynoglossidae	
Symphurus spp	163
Disintegrated fish larva	164
Unidentified fish larva	167



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		9